

October 2005

an **Epidemic** **Without Borders:** **HIV/AIDS** in California and Mexico

Arnold Schwarzenegger

Governor

State of California

Dr. Julio Frenk Mora

Secretario

Secretaría de Salud de México

Kimberly Belshé

Secretary

California Health and Human Services Agency

Dr. Roberto Tapia-Conyer

Subsecretario

Prevención y Protección de la Salud

Secretaría de Salud de México

Sandra Shewry

Director

California Department of Health Services



California Department of Health Services, Office of AIDS • MS 7700 P.O. Box 997426, Sacramento, CA 95899-7426

www.dhs.ca.gov/AIDS



An Epidemic Without Borders:

HIV/AIDS in California and Mexico

Prepared By:

**Assunta Ritieni, M.H.S.
Licenciado Enrique Bravo Garcia
Julia Hutchins, M.P.H., M.P.P.
Seema Mittal, M.P.H.**

**California Department of Health Services
Office of AIDS
HIV/AIDS Epidemiology Branch
www.dhs.ca.gov/AIDS**

**Secretaría de Salud de México
Centro Nacional para la Prevención y Control del VIH/SIDA (CENSIDA)
www.ssa.gob.mx/conasida**

October 2005

**Kevin Reilly, D.V.M., M.P.V.M.
Deputy Director
Prevention Services
California Department of Health Services**

**Michael Montgomery, Chief
Office of AIDS
California Department of Health Services**

**Juan D. Ruiz, M.D., M.P.H., Dr.P.H.
Chief
HIV/AIDS Epidemiology Branch
Office of AIDS
California Department of Health Services**

**Roberto Tapia-Conyer, M.D.
Subsecretario
Prevención y Protección de la Salud
Secretaria de Salud de México**

**Jorge Saavedra López, M.D.
Director
CENSIDA, México**

**Carlos Magis-Rodríguez, M.D.
Director
Dirección de Investigación
CENSIDA, México**

ACKNOWLEDGEMENTS

Funding for this report was provided by the California Department of Health Services (DHS), Office of AIDS (OA) and DHS Office of Binational Border Health as part of a California-Mexico Health Initiative. The authors would like to thank the following individuals at OA: John Keasling for designing the report cover and working on the report graphics; Michael Donahue, Sharon Ito, and Jenni Baham for providing information and assistance with the California HIV/AIDS Reporting System and database; Mark Kuniholm for reviewing and providing advice on the initial report content; and Barbara Bailey for her suggestions. The authors would like to especially thank Marta Cazares for her assistance with the fiscal aspects of report translation and printing, Rocky Schnaath for her expertise in Spanish-English translation, and University of California graduate students, Erin Bray and Anne Sunderland, for their assistance in incorporating changes to the document.

Suggested Citation: Ritieni, A.; Bravo, E.; Hutchins, J.; Mittal, S. *An Epidemic Without Borders: HIV/AIDS in California and Mexico*. Sacramento, California Department of Health Services, 2004.

Correspondence concerning this report should be addressed to either:
Assunta Ritieni, HIV/AIDS Epidemiology Branch, OA, DHS, MS 7700, P.O. Box 997426, Sacramento, CA 95899-7426; e-mail: aritieni@dhs.ca.gov; telephone: (916) 449-5841;
or Enrique Bravo Garcia, Dirección de Investigación, Centro Nacional para la Prevención y el Control del VIH/SIDA, México City, México; e-mail: ebravo@salud.gob.mx; telephone 55-28-4848, extension 211.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES.....	i
EXECUTIVE SUMMARY	v
INTRODUCTION.....	1
Background – The Migrant Population: Vulnerability, Behavior, and HIV/AIDS	5
California’s Perspective: HIV/AIDS and the Migrant Population in California.....	6
Mexico’s Perspective: HIV/AIDS and the Migrant Population in Mexico	14
Section I: HIV/AIDS DATA COLLECTION AND MANAGEMENT	19
California’s HIV/AIDS Surveillance System	20
Mexico’s HIV/AIDS Surveillance System	23
Section II: HIV/AIDS STATISTICS IN CALIFORNIA AND MEXICO	27
Statistical Methods.....	28
AIDS Cases in California	33
AIDS Among Hispanics in California.....	55
AIDS Among Hispanics of Mexican Descent in California	71
AIDS Cases in Mexico	87
Section III: POSSIBLE STRATEGIES TO ENHANCE HIV/AIDS SURVEILLANCE AMONG MIGRANTS	99
REFERENCES.....	107

List of Tables and Figures

Section I: HIV/AIDS DATA COLLECTION AND MANAGEMENT

<u>Figure 1:</u> The AIDS Reporting System in California	21
<u>Figure 2:</u> The HIV Reporting Process in California.....	22
<u>Figure 3:</u> The HIV and AIDS Reporting Structure in Mexico.....	24

Section II: HIV/AIDS STATISTICS IN CALIFORNIA AND MEXICO

AIDS Cases in California

<u>Figure 4:</u> Cumulative AIDS Cases in California – Age at Diagnosis and Gender	35
<u>Figure 5:</u> Cumulative AIDS Cases in California – Race/Ethnicity	36
<u>Figure 6:</u> Cumulative AIDS Cases in California – Race/Ethnicity and Gender	36
<u>Table 1:</u> Cumulative AIDS Cases Diagnosed Under the Age of 30 – Race/Ethnicity and Gender	37
<u>Figure 7:</u> Cumulative AIDS Cases in California – Mode of Exposure and Gender	38
<u>Figure 8:</u> Cumulative AIDS Cases in California – Mode of Exposure and Race/Ethnicity	38
<u>Figure 9:</u> Cumulative AIDS Cases in California – County of Residence at Diagnosis and Race/Ethnicity	39
<u>Figure 10:</u> Males Living with AIDS and the Male Population in California – Current Age	41
<u>Figure 11:</u> Females Living with AIDS and the Female Population in California – Current Age	41
<u>Figure 12:</u> California Data: Individuals Living with AIDS – Age at Diagnosis and Race/Ethnicity	42
<u>Figure 13:</u> California Data: Individuals Living with AIDS – Race/Ethnicity.....	42
<u>Figure 14:</u> California Data: Individuals Living with AIDS – Mode of Exposure and Gender	43
<u>Figure 15:</u> California Data: Individuals Living with AIDS – County of Residence at Diagnosis.....	44
<u>Figure 16:</u> California Data: Individuals Living with AIDS – County of Residence at Diagnosis and Race/Ethnicity	44
<u>Figure 17:</u> Trends in New Annual AIDS Cases and Annual Deaths among AIDS Cases in California, 1983-2000	45
<u>Table 2:</u> Annual AIDS Incidence in California, 1983-2000.....	46
<u>Table 3:</u> Median Survival Time (in Years) by Year of Diagnosis, 1983-2000	46
<u>Figure 18:</u> Trends in New Annual AIDS Cases in California by Race/Ethnicity, 1983-2000.....	48
<u>Figure 19:</u> Trends in Percent of Total New Annual AIDS Cases in California by Race/Ethnicity, 1983-2000	48
<u>Figure 20:</u> Trends in New Annual AIDS Cases in California by Race/Ethnicity and Gender, 1983-2000.....	49

List of Tables and Figures

<u>Figure 21:</u>	Trends in Percent of Total New Annual AIDS Cases in California by Race/Ethnicity and Gender, 1983-2000	50
<u>Figure 22:</u>	Annual AIDS Incidence in California by Race/Ethnicity, 1983-2000	51
<u>Table 4:</u>	New AIDS Cases and the General Population of California by Race/Ethnicity, 2000.....	51
<u>Figure 23:</u>	Trends in Percent of Total Annual Deaths among AIDS Cases in California by Race/Ethnicity, 1983-2000	52
<u>Figure 24:</u>	Trends in Median Survival Time for AIDS Cases in California by Race/Ethnicity, 1983-2000	53

AIDS Among Hispanics in California

<u>Figure 25:</u>	Cumulative Hispanic AIDS Cases in California – Gender and Age at Diagnosis	57
<u>Figure 26:</u>	Cumulative Hispanic AIDS Cases in California – Region of Descent (Among Cases with Specified Region of Descent)	57
<u>Figure 27:</u>	Cumulative Hispanic AIDS Cases in California – Region of Descent and Gender.....	58
<u>Figure 28:</u>	Cumulative Hispanic AIDS Cases in California – Country of Birth and Region of Descent	58
<u>Figure 29:</u>	Cumulative Hispanic AIDS Cases in California - Mode of Exposure and Gender	59
<u>Figure 30:</u>	Cumulative Hispanic AIDS Cases in California - Mode of Exposure for Hispanic Cases of Central American and Mexican Descent.....	59
<u>Figure 31:</u>	Hispanics Living with AIDS and the Hispanic Population in California – Current Age and Gender.....	61
<u>Figure 32:</u>	Hispanics Living with AIDS and the Hispanic Population in California – Region of Descent	62
<u>Figure 33:</u>	Hispanics Living with AIDS – Mode of Exposure and Gender	63
<u>Figure 34:</u>	Trends in New Annual Hispanic AIDS Cases and Deaths in California, 1983-2000	64
<u>Figure 35:</u>	Trends in Percent of Total New Annual Hispanic AIDS Cases in California by Gender, 1983-2000	65
<u>Figure 36:</u>	Trends in Percent of Total New Annual Hispanic AIDS Cases in California by Region of Descent, 1983-2000.....	66
<u>Table 5:</u>	New Hispanic AIDS Cases and California's Hispanic Population by Region of Descent, 2000	67
<u>Figure 37:</u>	Trends in Percent of Total Annual Deaths among Hispanic AIDS Cases in California by Region of Descent, 1983-2000	68
<u>Figure 38:</u>	Trends in Percent of Total New Annual Male Hispanic AIDS Cases in California by Mode of Exposure, 1983-2000	69

List of Tables and Figures

AIDS Among Hispanics of Mexican Descent

<u>Table 6:</u>	Cumulative AIDS Cases by Living Status and Country of Birth	72
<u>Figure 39:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and Gender	73
<u>Figure 40:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and Age at Diagnosis for Males	74
<u>Figure 41:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and Age at Diagnosis for Females	74
<u>Figure 42:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and Mode of Exposure for Males	75
<u>Figure 43:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and Mode of Exposure for Females	75
<u>Figure 44:</u>	Cumulative AIDS Cases of Mexican Descent in California – Country of Birth and County of Residence at Diagnosis	76
<u>Figure 45:</u>	Hispanics of Mexican Descent Living with AIDS – Country of Birth and Gender.....	77
<u>Figure 46:</u>	Hispanic Males of Mexican Descent Living with AIDS – Country of Birth and Current Age	78
<u>Figure 47:</u>	Hispanic Females of Mexican Descent Living with AIDS – Country of Birth and Current Age	78
<u>Figure 48:</u>	Hispanic Males of Mexican Descent Living with AIDS – Country of Birth and Mode of Exposure	79
<u>Figure 49:</u>	Hispanic Females of Mexican Descent Living with AIDS – Country of Birth and Mode of Exposure	80
<u>Figure 50:</u>	Hispanics of Mexican Descent Living with AIDS – Country of Birth and County of Residence at Diagnosis	80
<u>Figure 51:</u>	Trends in New Annual Cases and Annual Deaths among AIDS Cases of Mexican Descent in California, 1987-2000	82
<u>Figure 52:</u>	Trends in New Annual AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000	83
<u>Figure 53:</u>	Trends in Percent of Total New Annual AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000	83
<u>Figure 54:</u>	Trends in Annual Deaths among AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000	84
<u>Figure 55:</u>	Trends in Percent of Total Annual Deaths among AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000	84

AIDS Cases in Mexico

<u>Figure 56:</u>	Cumulative AIDS Cases in Mexico – Age at Diagnosis.....	88
<u>Figure 57:</u>	Cumulative AIDS Cases in Mexico – Age at Diagnosis and Gender	89
<u>Figure 58:</u>	Cumulative AIDS Cases in Mexico – Mode of Exposure.....	90
<u>Figure 59:</u>	Cumulative AIDS Cases in Mexico – Mode of Exposure and Gender	90

List of Tables and Figures

<u>Figure 60:</u>	Cumulative AIDS Cases in Mexico – Mode of Exposure and Age at Diagnosis	91
<u>Figure 61:</u>	Cumulative AIDS Cases in Mexico – Residence at Diagnosis	91
<u>Figure 62:</u>	Individuals Living with AIDS in Mexico – Current Age	92
<u>Figure 63:</u>	Individuals Living with AIDS in Mexico – Mode of Exposure	93
<u>Figure 64:</u>	Individuals Living with AIDS in Mexico – Mode of Exposure and Gender	94
<u>Figure 65:</u>	Individuals Living with AIDS in Mexico – Residence at Diagnosis.....	94
<u>Figure 66:</u>	Trends in New Annual AIDS Cases in Mexico, 1983-2000	95
<u>Figure 67:</u>	Trends in Percent of Total New Annual AIDS Cases in Mexico by Gender, 1983-2000	96
<u>Figure 68:</u>	Trends in Percent of Total New Annual AIDS Cases in Mexico by Age at Diagnosis, 1983-2000	96
<u>Figure 69:</u>	Trends in Percent of Total New Annual AIDS Cases in Mexico by Mode of Exposure, 1983-2000	97

EXECUTIVE SUMMARY

Executive Summary

Migrant workers and their families are considered a vulnerable population to human immunodeficiency virus (HIV) infection. Poor working and living conditions,^{1,2} multiple barriers to obtaining medical care,³⁻⁹ high rates of drug and alcohol use,^{10, 11} and risky sexual practices^{10, 12, 13} all put migrants at high risk of contracting and transmitting HIV.⁶ However, traditional surveillance efforts have failed to capture enough information to implement successful prevention programs to reach these transient populations. Existing HIV/acquired immunodeficiency syndrome (AIDS) prevalence and incidence measures are limited and may not be representative of all migrants in California. While some risk-behavior data have been collected among migrant farm workers, very little is known about migrants working in cities or in non-farm industries. These information gaps are significant considering the large number of situational and behavioral risk factors present in migrant populations. As a result, there is an urgent need for greater investigation of this population, especially of migrants of Mexican descent.

This report has been developed to spearhead ongoing information exchange between California and Mexico and to document the commitment of the AIDS offices of both regions to address the concern of HIV/AIDS for populations that live and work binationally. The first section of this report provides background information. It discusses the situation among migrants, including their increased social vulnerability, HIV risk behaviors, and their limited access to education about HIV risk and prevention. It also presents findings from studies that have been done to assess HIV risk in migrant populations, and explains the challenges of conducting such research. Perspectives from both California and Mexico are presented. The second section discusses the current HIV/AIDS surveillance, data collection, and management systems in both regions. Statistics on cumulative, prevalent, and incident epidemiological AIDS data through 2000 for both California and Mexico are then presented in the third section. Finally, the last section proposes several recommendations, developed to enhance communication and collaboration between Mexico and California, and to lay the groundwork for an effective binational system of surveillance for the two regions.

This information exchange will ultimately provide insight into the challenges of closing information gaps with respect to the epidemic among the migrant population, particularly among Mexican migrants. It is the goal of both offices to continue the binational collaboration documented in this report and to support new binational epidemiological studies on the prevalence and incidence of HIV/AIDS, HIV/AIDS behavioral surveillance, and access to HIV/AIDS care among Mexican migrant and transborder populations.

INTRODUCTION

Introduction

Workers from Mexico travel north to California to find work in agriculture, service, and industry sectors, in both rural and urban areas. The majority of these workers are young, male, and move around to different areas for work. Unfortunately, many of these workers and their families may face many challenges when they arrive. Many may not speak English and some also do not speak Spanish. Many may not have access to or may not be aware of available medical care, and find themselves in a culture that may be very different than that to which they are accustomed. Furthermore, many may accept work in difficult conditions in order to support themselves and their families. Access to traditional education and prevention messages may be limited to many migrants due to the transitional nature of their living and work conditions and the language in which materials and programs are presented. The continual mobility, lack of a stable community, in addition to these other factors, may place many migrants at increased health risk.

Researchers are just beginning to understand the complexity of interactions between the hosts of different factors that may influence HIV-related risk behaviors in Mexican farm worker communities. More information on the predictive factors and relative risks of these behaviors and of migration cycles is needed to paint an accurate picture of the HIV/AIDS epidemic among Mexican migrants. Although it has been estimated that Mexican migrant workers are at ten times greater risk of contracting HIV than the general United States (U.S.) population, relatively few researchers have assessed HIV/AIDS and risk-taking behaviors exclusively among Mexican migrants.⁶ Furthermore, the situation indicates a need for culturally and linguistically appropriate HIV/AIDS education and prevention programs designed specifically for migrant populations. To ensure that programs are designed to effectively reach those most at risk, formative research must be conducted along with detailed HIV/AIDS surveillance among migrants.

Unfortunately, implementation of HIV prevention and surveillance efforts for the migrant population is challenging. Only limited information is available on Latino migrants in California. Existing surveillance systems in California and Mexico are not capable of collecting much-needed, complete information on binational populations; unlike the populations they need to assess, these systems stop at the border. The individual surveillance systems in California and Mexico are not set up to capture data on services accessed outside of their jurisdictions. There are, therefore, large gaps in data. Neither Mexico nor California currently has the ability to estimate HIV/AIDS incidence and prevalence in this population, to track migration patterns, or to trace the history of diagnosis and treatment in this population.

The lack of a binational surveillance system and of a coordinated system of health and prevention education between California and Mexico prevents both regions from addressing the needs of the migrant population. The risk is that both countries will be unaware of an emerging epidemic of HIV/AIDS among migrants that could overwhelm available health care and social service resources. In addition, there is a concern that different HIV subtypes and/or resistant strains of HIV may travel both ways across the border. The ultimate concern is that Mexico and California may be faced with an

Introduction

overwhelming burden of HIV disease in a system not prepared for binational education and prevention, counseling and testing, and care and treatment. The best approach is preparation; surveillance and corresponding prevention and care services. It is, therefore, critical that both countries work together to improve HIV/AIDS surveillance among this at-risk population. Improved surveillance will allow public health officials on both sides of the border to develop effective interventions to decrease risk and promote the health of migrants.

This report has been developed to spearhead ongoing information exchange between California and Mexico and to document our commitment to address the HIV/AIDS-related concerns for populations that live and work binationally. The first section of this report provides background information. It discusses the situation among migrants, including their increased social vulnerability, HIV risk behaviors, and limited access to education about HIV risk and prevention. It also presents findings from studies that have assessed HIV risk in migrant populations, and explains the challenges of conducting such research. Perspectives from both California and Mexico are presented. The second section discusses the current HIV/AIDS surveillance systems, data collection, and management in both regions. Statistics on cumulative, prevalent, and incident epidemiological AIDS data through 2000 for both California and Mexico are presented in the third section. Data on the epidemic among all Mexicans and among all Californians, in addition to Hispanics and individuals of Mexican descent in California, are presented in order to provide a complete picture of the epidemic in both regions. Finally, the last section proposes several strategies to enhance communication and collaboration between Mexico and California, and to lay the groundwork for an effective binational system of surveillance.

OA and Centro Nacional para la Prevención y Control del VIH/SIDA (CENSIDA) are committed to the challenge of creating a viable binational HIV/AIDS epidemiologic surveillance system. This commitment stems from a common desire to better serve the migrant population by gathering information that will assist California and Mexico in providing health services, social resources, and culturally and linguistically appropriate educational initiatives. These efforts will help California and Mexico in learning how best to reach, and protect the health of, this population.

Background

The Migrant Population: Vulnerability, Behavior, and HIV/AIDS

Background

California's Perspective: HIV/AIDS and the Migrant Population in California

The Migrant Population and Risk Behaviors

Overview

Migrant workers and their families are considered a vulnerable population to HIV infection. Poor working and living conditions,^{1,2} multiple barriers to obtaining medical care,³⁻⁹ high rates of drug and alcohol use,^{10, 11} and risky sexual practices^{10, 12, 13} all put migrants at high risk of contracting and transmitting HIV.⁶ However, traditional surveillance efforts have failed to capture enough information to implement successful prevention programs to reach these transient populations. Existing HIV/AIDS prevalence and incidence measures are limited and may not be representative of all migrants in California. While some risk-behavior data have been collected among migrant farm workers, very little is known about migrants working in cities or in non-farm industries. These information gaps are significant considering the large number of situational and behavioral risk factors present in migrant populations. As a result, there is an urgent need for greater investigation of this population, especially of Mexican migrants.

California is home to 3.2 million Mexican-born individuals and continues to attract 28 percent of all temporary Mexican migrants.^{14, 15} A recent report by Mexico's National Population Council estimates that 140,000 Mexicans "come and go" annually between Mexico and California.¹⁴ Migrant workers in California include legal and illegal temporary migrants, short-term visitors, and long-term temporary migrant workers. The vast majority of Mexican migrants are men (93 percent) in their mid-30s¹⁴ or younger, working in both rural and urban settings.

Migrant and Seasonal Farm Workers

According to the Mexican Health Secretary, Dr. Julio Frenk, Mexican migrants looking for work typically leave home in August or September for the harvest and return in the spring.¹⁶ They are usually employed in the agricultural sector and work in fruit and vegetable fields, food processing and sorting plants, and horticultural and reforestation centers throughout California.¹⁷ In 2000, the total number of migrant and seasonal farm workers in California reached 1.7 million (including non-working household members).¹⁷ Of nearly 1,000 randomly sampled farm workers who participated in the California Agricultural Worker Health Survey in 1999, 96 percent identified themselves as Mexican, Hispanic, or Latino.⁴ Researchers noted that most agricultural workers in California are "members of binational families or village networks, often having family members, including dependents, on both sides of the southern U.S. border."⁴

Most farm worker families make less than \$10,000 per year, and 42 percent share their home with two or more families.¹⁵ An estimated two-thirds of migrant families in the United States live below the poverty line.³ Frequent relocation combined with cultural, economic, social, and linguistic barriers also make it easy for migrant farm workers to

Background

fall through the cracks of the U.S. health care system.⁵ One study of farm workers in California found that one-third had never been to a doctor or clinic in their lifetime and, of those who had, one-fifth had received medical care in Mexico, not the United States.⁴ Lack of access to adequate health care combined with poor living and working conditions has put migrant farm workers and their families at high risk for infectious diseases, cancer, diabetes, hypertension, dental disease, and arthropathies.¹⁸ The National Center for Farmworker Health found that 40 percent of migrant workers who visited a clinic in the United States had multiple and complex health problems.^{3, 18} Researchers are just beginning to understand the complexity of interactions between the hosts of different factors that may influence HIV-related risk behaviors in Mexican farm worker communities. More information on the predictive factors and relative risks of these behaviors and of migration cycles is needed to paint an accurate picture of the HIV/AIDS epidemic among Mexican migrants.

Urban Day Laborers

While traditionally the term “migrant worker” has been applied to those individuals employed in the agricultural sector, a majority of Mexican migrants work in commercial and service sectors rather than on farms.¹⁴ There is a dearth of information on Mexican migrants working in California’s urban areas. To date, there has been no comprehensive report on how many Mexican migrants are working in nonagricultural jobs in California, where they are working, or under what conditions they are working. What is known, however, is that the jobs most readily available to migrants and recent immigrants pay minimum wage or less and offer few, if any, benefits.

According to the U.S. Department of Labor, Latinos make up a disproportionately large proportion of the workforce in low-paying jobs. For example, 80 percent of those employed in the garment industry are Latino.¹⁹ Other urban-based jobs that typically employ Latino workers include food service, construction, janitorial services, private household work, manufacturing, warehouse loading, textile pressing and sewing, and electronic assembly.^{19, 20} The lack of information about Mexican migrants working in nonagricultural labor has severely hindered the efforts of outreach workers to design prevention plans specifically for this population.

Subpopulation of Mexican Migrants: Indigenous Population

Of the Latino farm workers who responded to the 1999 California Agricultural Worker Health Survey, 8.2 percent self-identified as indigenous in the “other” ethnicity category.⁴ A 1995 study of 249 Mixtec migrants interviewed in their hometown in Mexico found that 50 percent of return migrants had worked in agricultural areas of San Diego County, 17 percent in Central San Joaquin Valley, and 26 percent in Willamette Valley, Oregon.²² On average, Mixtec farm workers had 6.5 different jobs per agricultural season. Although indigenous workers currently make up a small proportion (five to ten percent) of farm workers in California,²¹ the numbers may be on the rise.

Background

The Mixtecs, from the southern Mexican state of Oaxaca, are thought to be the largest group of indigenous Mexican migrants in California.²¹ According to a report released by the California Institute for Rural Studies, an estimated 20,000 to 30,000 Mixtecs were working in California in 1993.²¹ The vast majority of these migrants are men (89 percent) who have families in Mexico (55 percent). Very few speak Spanish or English, but rather speak Misteco, a native language.²¹

Unfortunately, little information is known about indigenous migrants working in the nonagricultural sector. As companies operating in the U.S.-Mexico border region continue to look for new sources of cheap labor, recruitment of workers from indigenous communities far from the border is increasing.²² Because of the very different cultural and ethnic backgrounds of indigenous Mexicans, effective prevention measures require much more knowledge about this subpopulation of migrants.

The Border

The effect of the U.S.-Mexico international border on HIV transmission among Mexican migrants is not fully understood. Given that approximately 250,000 individuals cross the California-Mexico border each day (more than 10,000 border crossings per hour), a truly accurate description of the HIV/AIDS epidemic needs to consider this “open border” effect.²³ All overland Mexican migrants to California must pass through the border towns of San Ysidro, Otay Mesa, Tecate, Calexico, or Andrade. These towns are the first stop for many Mexican migrants looking for work in California. Job-seekers in these areas often receive information about working in the United States, and they make contacts with individuals who can direct them to potential employers.²²

Amidst the regular stream of individuals traveling from Mexico to the United States and back again, are those who have made their homes along the border. In the United States, one-third of all families residing in the border region live at or below the federal poverty level.⁷ One government health official equated the problems along the border to that of Appalachia, East St. Louis, West Chicago, and other areas of extreme poverty in the United States.⁷ Unsanitary living conditions combined with a lack of public health infrastructure also contribute to the high incidence of communicable and chronic diseases.⁷ Border areas in both the United States and Mexico have high rates of HIV/AIDS, tuberculosis, and hepatitis A.^{7, 24} Prevalence of cancer, diabetes, and asthma in the border region are higher than in either of the two countries as a whole.²² Substance abuse and prostitution are also common in these areas.^{25, 26} Mexican migrants living and passing through border towns are exposed to these and many other factors that may contribute to the spread of HIV. The importance of binational cooperation in surveillance, prevention, and treatment of HIV in border communities cannot be underestimated.

Background

HIV/AIDS-Related Behaviors Among Migrants

Despite the many obstacles faced by researchers of HIV/AIDS in migrant populations, certain data on this population have been collected. Existing data indicate that risk behaviors are common in this population, and that current HIV prevention messages are not reaching, or are not understood by, individuals in migrant communities. A large proportion of Mexican migrants believe that HIV/AIDS can be contracted through unlikely sources.^{13, 27, 28} For example, of 154 migrant farm workers interviewed in San Joaquin County in a 1997 cross-sectional survey, 42 percent believed HIV could be spread by kissing.²⁷ In another study of 501 Mexican migrants, approximately one-third of those interviewed thought that the AIDS virus could be spread through the use of public bathrooms (30.3 percent), or by mosquitoes (39.9 percent).¹³ Two studies also found that a large proportion (over 50 percent in one survey) of Mexican migrants believed HIV could be contracted through an AIDS test.^{13, 28} This finding in particular makes HIV surveillance and prevention challenging among Mexican migrant populations.

Similarly, a lack of knowledge about condom usage has been documented in migrant populations. One study found that, of 109 migrant farm workers interviewed during the summers of 1998 and 1999, only ten percent believed condoms were protective against AIDS.²⁹ Another large study conducted in the mid-1990s of 501 Mexican migrants from five “sending towns” in Jalisco, Mexico, found that only 13.8 percent of respondents could correctly answer simple questions about how to use a condom.¹³ Not surprisingly, condom usage among Mexican migrants is low.¹⁰⁻¹³ In the same population from Jalisco, 18.4 percent of male and female migrants indicated that they “never” used condoms with occasional sex partners¹³ and approximately 40.2 percent reported that they “never” used condoms with regular sex partners.¹³ A 1994 OA study found that of 122 male migrant farm workers interviewed, 69.2 percent had not used a condom in the past year.¹⁰

Low condom usage among migrants is coupled with other risky sexual behavior. In surveyed migrant communities, approximately 39 to 44 percent of individuals indicated that they had participated in prostitution. The prevalence of prostitution was equally high among married and single men.^{10, 12, 13} Reports of multiple men successively sharing one prostitute are also common.^{12, 13} Male-to-male sexual encounters are thought to be another factor that may increase the risk of HIV transmission in migrant communities. Almost half (47 percent) of reported AIDS cases among Mexican-born Latinos in the United States occur among men who have sex with men (MSM),³⁰ but cultural stigmas against MSM or lack of acknowledgement of same gender contact make it difficult to ascertain the prevalence of male-to-male sexual behavior among Mexican migrants.²⁹ A survey of unmarried Latino adults found that 62 percent did not think same gender sex among males was acceptable behavior.³¹ To effectively measure the proportion of MSM in migrant communities, culturally and linguistically sensitive research instruments will have to be developed.

Background

Alcohol and drug use, including injection drug use, are also prevalent in migrant populations and may contribute to the spread of HIV.^{10, 11, 32, 33} In a study of 173 migrant farm workers in Northern California, 40.0 percent of men and 66.7 percent of women reported using drugs or alcohol before or during sex.¹⁰ This study found that 8.1 percent of the farm workers had injected drugs in the last year. Research suggests that Mexican-born immigrants who inject illicit drugs are more likely to share unsterilized needles and less likely to report using condoms than U.S.-born injection drug users (IDUs).^{34, 35} Needle sharing not only increases HIV risk among illicit drug users, but also affects those who inject therapeutic drugs or vitamins. In Mexican migrant farm worker communities, injection of therapeutic drugs was found to be more common than injection of illicit drugs. In a study of 411 Mexican farm workers, 3 percent reported injection of illicit drugs, but 20.3 percent reported self-injection of antibiotics and vitamins.³² Of this 20.3 percent, 3.5 percent reported sharing needles with others.³² Qualitative data from a study of Mexican migrants in North Carolina revealed that among this population, therapeutic injections are generally thought to be more effective than pills and also provide a cheap and easy alternative to seeking medical care in the United States.³³ A pilot study of HIV-positive Mexican migrants in California discovered that almost half of the interviewed migrants had shared needles to inject therapeutic agents.³⁶

Two recent U.S. projects have been aimed at providing HIV awareness and prevention information to migrant and seasonal farm workers. The first project, the Promotores de Salud, is a peer health educator-based program located along two border communities in Arizona and Texas. It began in 1997 with the goal of training 50 farm worker men, women, and youth in HIV prevention so that they could then educate their communities. Since then, a core group of promotores has been formed and they have provided HIV prevention information and referrals to over 5,000 farm worker family members. The success of this program stems from the fact that the promotores share the same language and culture, and similar experiences as community members and, thus, are able to deliver HIV prevention messages in terms that farm workers can understand and relate to. In addition, the promotores are able to reach hard-to-find farm workers and their families, as well as bridge cultural and linguistic gaps between public health educators and the farm worker community.

The second project is the Napa Valley AIDS Project in California, which is designed to provide outreach, education, and HIV testing programs for monolingual migrants and farm workers. This program began in 1998 with three bilingual/bicultural outreach health educators who visited wineries, migrant camps, apartment buildings, homes, and streets. They did outreach, conducted HIV tests, distributed condoms, bleach kits, and provided referrals. From there, other individuals were trained as peer educators and continued the flow of information. From 1998 to 1999, more than 2,000 farm workers were reached and there was an 80 percent increase in HIV testing. The program is based on the idea of continual contact (as opposed to one-time contact), and building partnerships and trust with the community members.

Background

HIV/AIDS Among Migrants; Collection, Analysis, and Interpretation of Epidemiological Data

Data Collection

Although it has been estimated that Mexican migrant workers are at ten times greater risk of contracting HIV than the general U.S. population, relatively few researchers have assessed HIV/AIDS and risk-taking behaviors exclusively among Mexican migrants.⁶ Even fewer have examined the factors predicting risky behavior in migrant communities. This lack of information on the behaviors of migrant workers is not confined to the study of HIV/AIDS. A literature review on the health status of migrant farm workers in the United States concluded: "We are unable to estimate crude death rates, age-specific death rates, or prevalence rates for most common causes of death, such as heart disease, cancer, and stroke. There is no information about occupational accident rates, infectious disease rates, or even post-neonatal mortality."³⁷ This information void on migrant workers can be primarily attributed to perceived difficulties in collecting and analyzing data from this population.

Many researchers are deterred from looking at migrant populations because of challenges in collecting epidemiological data.³⁸ Agricultural workers are a highly mobile and geographically dispersed population, which creates significant barriers to long-term research. Tracing efforts must be extremely large, as migrant workers often have variable migration patterns and multiple jobs per season.³⁸ Tracking urban migrant day laborers is even more complex, as these individuals are likely to be employed in a number of different jobs.

Other geographic, economic, and cultural barriers also complicate surveillance and treatment efforts.⁵ Most migrant workers do not have the time, transportation, or money to visit regional health clinics, which are often a common source of surveillance data for other populations.^{7, 38} Many migrants often return to Mexico for health care, use traditional remedies, or wait until their disease is at an advanced stage before seeking health care in the United States.^{8, 43} Fear, language barriers, and lack of knowledge about available health care services also pose serious challenges for data collection.^{8, 9, 40, 41} Effective outreach workers have found that building up trust within migrant communities is crucial for success.^{40, 41} Fear of being reported to immigration authorities is very real for migrants. Many migrants are hesitant to access state provided HIV/AIDS services and are, for the most part, reluctant to be involved with surveillance and prevention efforts.⁴⁰

Mexican and U.S. researchers studying Mexicans migrating between Guanajuato, Mexico, and Pennsylvania identified more fundamental challenges to effective epidemiological research of migrant populations: 1) lack of communication binationally; 2) interrupted medical care due to migration; 3) inconsistent diagnosis and treatment criteria; 4) lack of binational clinical record referral; and 5) deficient legal regulations concerning transfer of clinical data.⁴² Mexican researchers at the Instituto Nacional de Salud Pública concluded, "Serious structural and organizational deficits in the public

Background

health care system of both countries must be addressed before epidemiological surveillance can be achieved binationally.”⁴²

Despite the many obstacles to collecting data on migrant populations, some research has successfully been conducted with this population. The vast majority of existing epidemiological data gathered on migrant populations is from cross-sectional studies.^{10, 13, 22, 27, 29, 33, 43, 44} While most of these studies have recruited participants from migrant health clinics⁴⁴ and labor camps^{10, 27, 34, 43} in the United States, a few researchers have interviewed migrant laborers in “sending towns” in Mexico.^{13, 22} One of the largest studies looking at HIV/AIDS-related beliefs and behaviors of Mexican migrants was done by Organista, et al.¹³ Snowball sampling was used to recruit 501 participants from homes, work places, and social settings in Mexican towns where U.S. out-migration was known to be relatively high. Field interviews were conducted with Mexican laborers who had lived and worked in the United States since 1982. Another study by Zabin, et al., collected data on Mixtec migrants on both sides of the U.S.-Mexico border. Snowball sampling of Mixtecs living in labor camps and squatter settlements in California and Oregon allowed for interviews with migrants from a large number of original communities. Data were also collected in 36 Mixtec villages in Oaxaca, Mexico.

Cancer researchers have also attempted to track cohorts of farm workers who migrate between U.S. states.^{23, 38, 45} Cooper, et al. reported a 91 percent success rate in locating 196 migrant farm workers living along the Texas-Mexico border ten years after they had participated in a health study.²³ In Wisconsin, researchers investigated their ability to locate migrants who had accessed services ten years earlier. Of a total 100 randomly identified migrants who visited a migrant health clinic ten years earlier, only six percent could be located.³⁸ Of these 100 migrants, 46 had listed Texas as their last known address; more intensive tracing efforts located 25 (54 percent) of these farm workers. The National Cancer Institute and the Association of Farmworker Opportunity Programs (AFOP), has begun a large prospective pilot study of migrant and seasonal farm workers to determine the feasibility of prospective data collection among migrants.⁴⁵ In a 16-month period, almost 5,600 farm workers requesting services from AFOP were recruited for the cohort study. Demographic, employment, and health care information, as well as a few selected epidemiological variables, were collected. Following this cohort over time will help epidemiological researchers gain a better understanding of the opportunities and challenges of prospective research in migrant populations.

In California, ongoing data collection of HIV/AIDS-related information on migrants is not currently part of overall statewide active AIDS surveillance activities. However, when an AIDS case report is filed by a health care provider or county surveillance staff as part of California’s HIV/AIDS Reporting System (HARS), the variables ‘country of origin,’ ‘current residence,’ ‘residence at diagnosis,’ and ‘subethnicity’ can be recorded. This information may help researchers determine whether the diagnosed individual is likely to be part of the Mexican migrant population. With information about the number of HIV/AIDS cases that may be occurring in migrant communities, researchers are better able to design culturally and linguistically appropriate HIV surveillance techniques and

Background

HIV prevention messages. In addition, information about an individual's current residence and residence at diagnosis can be used to track migratory patterns within California. Lastly, a case's date of diagnosis, in conjunction with his/her residence at diagnosis, may be able to be used to pinpoint an individual's residence at the time of their HIV/AIDS diagnosis.

Information on these variables may help researchers understand the spatial patterns of AIDS incidence within California. Although some of the information routinely collected for HARS can be applied to the migrant population, other information is not collected as part of AIDS case reporting, such as whether an individual is a migrant from Mexico and his/her length of stay in the United States. This information would be useful for tracking the number of migrant HIV/AIDS cases; however, it would not be applicable to the majority of AIDS cases reported in the state, and it may not be very reliable considering deportation fears among individuals in this population.

Analysis and Interpretation of Epidemiological Data

In addition to data collection, analyses and interpretation of data collected on the migrant population have also proven to be challenging. Of primary concern is the lack of reliable knowledge regarding the number of migrants in the country or in any one state at any particular time. National estimates have differed by almost seven million individuals.⁴⁶ State estimates are also prone to error. Varying definitions among federal agencies of what constitutes a "migrant" make it nearly impossible to estimate disease prevalence or incidence among Mexican migrants.^{27, 47}

Comparability of existing data from small-scale epidemiological studies is also difficult because of the variance in migrant definitions. Data analysis for subpopulations, such as Mexican migrants, is even more of a challenge. Some studies lump all Latinos into the same category^{43, 44} or do not compare risk-behaviors or knowledge across different ethnic groups.²⁹ Other studies do not distinguish between seasonal and migrant workers or between international and intra-national migrants.^{10, 43} Because of the difficulties in locating and tracking migrant populations, many studies often have low statistical power.^{10-12, 28, 29} In addition, data from migrant populations in different parts of the United States are often not generalizable to all migrants, as racial and ethnic backgrounds differ across the three major agricultural migration "streams." While Mexicans make up the majority of the West Coast migratory stream, the East Coast stream is primarily native African Americans, Latinos, and Caribbean Islanders, and the central stream is mostly Mexicans and native-born Spanish Americans.⁴⁸

Furthermore, some data fields in HARS that could provide a better assessment of migratory patterns among specific Hispanic subgroups have limited data. "Subethnicity" and "current residence" are two such fields. These data are limited for several reasons: (1) "subethnicity" was not added to the HARS database until 1993; (2) collection of information for both of these fields is optional; and (3) the case report form does not include a location for noting "subethnicity" and as such health care providers may not be prompted to collect or record this information if available. This information, if more

Background

complete in the future, may assist to some extent in assessing mobility of some subgroups of Hispanic cases diagnosed in California.

Mexico's Perspective: HIV/AIDS and the Migrant Population in Mexico⁴⁹

Since the first studies about migrant health were conducted, it has been recognized that significant migrations can accelerate and intensify the spread of infectious diseases. The AIDS epidemic is no exception to this classic epidemiological principle. Whether the migrations are of workers or refugees, rural-urban or rural-rural, seasonal or long-term, or even for business or tourism, all of these population movements have one thing in common: they facilitate chance unprotected sexual encounters and make both migrants and travelers potential HIV hosts and vectors.

According to the categories proposed by UNAIDS, Mexico can be classified as a country with a concentrated AIDS epidemic in which HIV has spread rapidly in a subgroup of the population, but has not established itself in the general population. In this type of epidemic, HIV infection prevalence has remained above five percent in at least one subgroup of the population, and among pregnant women in urban areas the prevalence is less than one percent. Mexico has an HIV prevalence rate of 15 percent among MSM and six percent among IDUs, while in pregnant women it is 0.09 percent. In adults between 15-49 years of age, the prevalence is 0.28 percent.

Bronfman, Camposortega, and Medina compared certain sociodemographic characteristics of all migrants to the United States (documented and undocumented) with those of reported AIDS cases in Mexico. They identified similarities in the data for both groups in terms of age and gender composition. Although they stated that this did not allow conclusions to be drawn about the direct relationship between the two phenomena, other data suggested that an increase in migrant risk behavior was highly likely. For example, the majority were single males and most of the others were traveling without their wives or girlfriends. Upon arrival they found themselves in a society with more open sexual attitudes than their own; migrants were at the age of peak sexual activity; and their receptivity to traditional HIV/AIDS education and prevention campaigns was low because of their living conditions and unfamiliarity with English. Other key variables included in the study were the origin and destination of the migrants in general and the incidence rates of AIDS in these locations. The authors also included an analysis of AIDS cases with a history of living in the United States, highlighting the differences in demographic characteristics (age, gender, and occupation) between these cases and the migrant group in general.

Conclusions of the study include: (1) the analysis does not establish a causal relationship between the two phenomena based on the available data, but it is possible to assume that the continuous population movements between the two countries involve some risk of HIV exposure and propagation; (2) the predominant pattern of HIV transmission in Mexico is similar to that of the United States, although they differ in the proportion of infections related to blood products and drug use; (3) differences in

Background

blood-borne transmission rates among infected individuals with a history of living in the United States may be due to travel to the United States in search of medical attention; and (4) differences in the profile of temporary Mexican migrants to the United States and AIDS cases with a history of residence in the United States would allow the postulation of two types of migration. High incidence rates in the states of Baja, California, and Jalisco, Mexico, could be related to migration streams, but low levels in other states where migrants originate would attenuate the potential spread of HIV due to migration.⁵⁰

In 1992, Bronfman updated several of the variables included in the previous study, highlighting the comparison between AIDS prevalence rates in border states and other states that typically send migrants to the United States, and the development (from July 1988 to April 1989) of certain characteristics among AIDS cases with prior residence in the United States (relationship between genders, index of masculinity, age groups, risk factors, and occupation). The study concluded that the data do not categorically support the influence of temporary Mexican migration to the United States on the expansion of AIDS in Mexico, but they are sufficient to support this hypothesis.⁵¹

Based on the results of previous studies of the relationship between AIDS and migration to the United States, Bonfman and Minello (1995), conducted a study using in-depth interviews with residents of a community in Michoacan with high levels of migration to the United States and with members of a California community to which most of these individuals migrated. The study's objectives were to: identify the sexual habits of individuals who migrated temporarily to the United States and those of their population of origin; evaluate the impact of migration on migrant sexual behavior; identify and evaluate the type of information that the migrants and non-migrants have about AIDS; and determine the impact of AIDS and available AIDS information on sexual behavior modification among migrants and non-migrants.

The main conclusion concerning the relationship between migration and AIDS is that during the migration process, the changes in sexual behavior that occur are different for men and women. These changes include: heterosexuals (men and women) engage in riskier sexual behavior as migrants; once in the United States, men and women who prefer same gender sex begin to practice behaviors related to their sexual preference or practice them more freely than in their community of origin (two co-factors are proposed in relation to this: arrival in a society that is more "tolerant" of this choice and "freedom" from family and societal control); some men do not self-identify as preferring same gender sex and are not perceived by others as such, but they do have sex with other men, and initiate these practices due to the loneliness and isolation they experience in the United States (a behavior that does not "matter" to the community of origin upon the migrant's return); and that migrant men in the United States have sex with "drug users/prostitutes" who "are cheaper than other prostitutes" and are, therefore, more sought out by migrants. The interviewees were knowledgeable about HIV transmission (more the case among migrants than non-migrants), but knowledge alone was insufficient for the respondents to take protective measures and to avoid HIV risk behaviors. During their study, Bonfman and Minello noted the presence of migrants

Background

who spoke neither English nor Spanish. In their research, they also found evidence of awareness of condom use to prevent HIV transmission, but this awareness was strongly associated with contraception and reduced sexual satisfaction; condom use is, therefore, limited. Although women's inability to negotiate partner condom use is discussed, the study also mentions that the women themselves reject condom use for the same reasons expressed by the men.⁵²

Local studies of the relationship between migration and AIDS, conducted primarily in areas with a high migration rates, investigated migrant risk factors. One study in Michoacan, Mexico, analyzed the impact of immigrants to the United States on the epidemiology of HIV/AIDS and the disease rate in the municipalities that export labor to the United States, defining the Michoacan emigrant risk factor profile. The study concluded that areas most affected by HIV/AIDS were those with the highest rate of migration to the United States, and that there was a statistically significant association between the following variables and migration to the United States: age; being married; sexual mode of HIV transmission; and being from a rural area. Because the study collected data on sociodemographic background, health history, sexual practices, and other risk factors, as well as patient laboratory test results, researchers were able to obtain relative risks, and as a result, were able to construct a "profile of the emigrant who seems to have a doubled risk of HIV/AIDS: a married bisexual male farm and/or transportation worker between 15 and 65 years of age who has immigrated to California."⁵³

In a review of the Mexican National Registry of AIDS Cases and data from sentinel HIV studies in the state of Michoacan, Santarriaga, et al.⁵⁴ evaluated the local impact of Mexico-U.S. migration on the AIDS epidemic. They concluded that Mexicans, who go to the United States to work and then return to Mexico, engage in high-risk sexual behavior or drug use in locations where there are higher HIV seroprevalence rates. According to the authors of the study, this dynamic is contributing to the "heterosexualization" of the AIDS epidemic in the state of Michoacan, which exports large numbers of temporary migrants to the United States.

Another link that was established between migration and AIDS had to do with the "ruralization" of the epidemic. Dr. Magis-Rodríguez and other researchers compared the proportion of AIDS cases reported since mid-1994 among rural residents with a history of migration to urban AIDS cases. They found that migration, mostly to the United States, was an important influencing factor (but not the only factor) in the presence of AIDS in rural areas. Risk factors identified for migrants who visited the United States included drug use and sex with commercial sex workers (CSW), as well as differences in risk behaviors between the U.S. and Mexican populations, and the fact that most migrants are men traveling without their families, living on farms, and having sexual contact with CSW or other men on the farm.^{55, 56} This study evaluated the role of migrants in disease transmission as well as the risk factors affecting migrants.

Another link that has been made between migration and the spread of HIV is presented in Dr. Magis-Rodríguez' article on risk behaviors among injection drug users.⁵⁷ The

Background

paper discusses how a high degree of migration in and out of cities in the northern regions of Mexico have lead to an increase in the amount of injection drug use in those regions. Dr. Magis-Rodríguez notes that these regions closest to the U.S.-Mexico border have the highest prevalence of injection drug use than other areas in Mexico. As such, it is proposed that injection drug use could become a primary cause of expansion of the AIDS epidemic in Mexican cities near the U.S.-Mexico border as well as in other parts of Mexico.⁵⁷

A synthesis of the risk factors identified by the aforementioned studies reveals two levels: a macro level in which the characteristics of the destination society are primary (the studies refer to migrants to the United States); and a micro level distinguished by certain individual migrant characteristics.

In terms of transmission factors, the authors mention the limited power of migrant wives and girlfriends to negotiate condom use, which would lead to the heterosexualization of the disease; misinformation or misuse of AIDS information among these women; and the use of contaminated syringes to inject medications or drugs.

Risk Factors for Mexican Migrants

Social Characteristics		Individual Characteristics	Risk Behaviors
Destination (U.S.)	Origin (Mexico)		
<ul style="list-style-type: none"> - More permissive cultural patterns regarding sexuality - High AIDS incidence rates - More extensive use of injection drugs - Prevention campaigns in English that have no impact on Mexican migrants 	<ul style="list-style-type: none"> - Strict community norms regarding sexuality - High and low incidence levels from state to state - Increase in injection drug use in border cities 	<ul style="list-style-type: none"> - Young and predominantly male - Single or travelling without family - Predominance of agricultural occupations - Low level of education and unfamiliarity with English - Loneliness and emotional isolation - Sexual preferences that would cause them to migrate to a more tolerant society 	<ul style="list-style-type: none"> - Engage in risky survival sex behaviors (prostitution) - Have sex with prostitutes - Heterosexual men who have sex with other men - Injection drug use with contaminated syringes - Low condom use - Alcohol and drug use increased

National Center for the Control and Prevention of AIDS, Mexico (CENSIDA)

Before presenting possible strategies to assess HIV infection and to address risk among migrants in California and Mexico, it is important to look at how surveillance is currently conducted and what is known about HIV/AIDS in both California and Mexico.

An Epidemic Without Borders: HIV/AIDS in California and Mexico - California Department of Health Services Office of AIDS and Centro Nacional para la Prevención y Control del VIH/SIDA, October 2005

Section I:

HIV/AIDS DATA COLLECTION AND MANAGEMENT

Data Collection and Management

During the first few years of the AIDS epidemic, the disease was reported as a “rare and unusual condition.” In 1983, AIDS became a reportable disease in both the United States and Mexico.

California’s HIV/AIDS Surveillance System

In 1983, the Department of Health Services, Office of AIDS (OA) created a confidential registry for all reported AIDS cases in California. This registry, still in use today, is based on HARS, an active, name-based surveillance system. AIDS cases are reported via two methods: (1) case reporting by health care providers, and (2) medical record abstraction in hospitals and private physicians’ offices by county surveillance staff. AIDS cases are reported by both health care providers and county surveillance officers using standardized forms that include the name, street address, gender, race/ethnicity, date of birth, age at AIDS diagnosis, county of diagnosis, and HIV infection risk factor of the diagnosed individual. State regulations require health care providers to report all individuals who meet the AIDS case definition to local health departments. These regulations require that cases be reported by name within seven days of diagnosis. This passive reporting system is supplemented by active surveillance by county surveillance staff. Presently the majority of AIDS cases in the state are identified through California’s active surveillance system.

Cases identified through passive surveillance are reported to local health departments who then, using local health department information, unduplicate these AIDS case reports as well as those obtained through active surveillance. These unduplicated reports are then submitted to OA. Since unduplication is an important component of AIDS reporting, both at the local and state level, OA, after entering all submitted case reports into HARS, unduplicates the reports from across the counties using state level information. OA then forwards the unduplicated AIDS case reports in aggregate to the Centers for Disease Control and Prevention (CDC) without inclusion of any personally identifying information. The standardized form that OA uses for reporting is based on the CDC reporting forms (CDC form 50.42A [adult] and CDC form 50.42B [pediatric] cases). The CDC then analyzes the data for all states to obtain nationwide AIDS prevalence, incidence, and risk factors. Lawmakers use these estimates to inform health policy and to allocate funds for prevention, surveillance, and treatment programs.

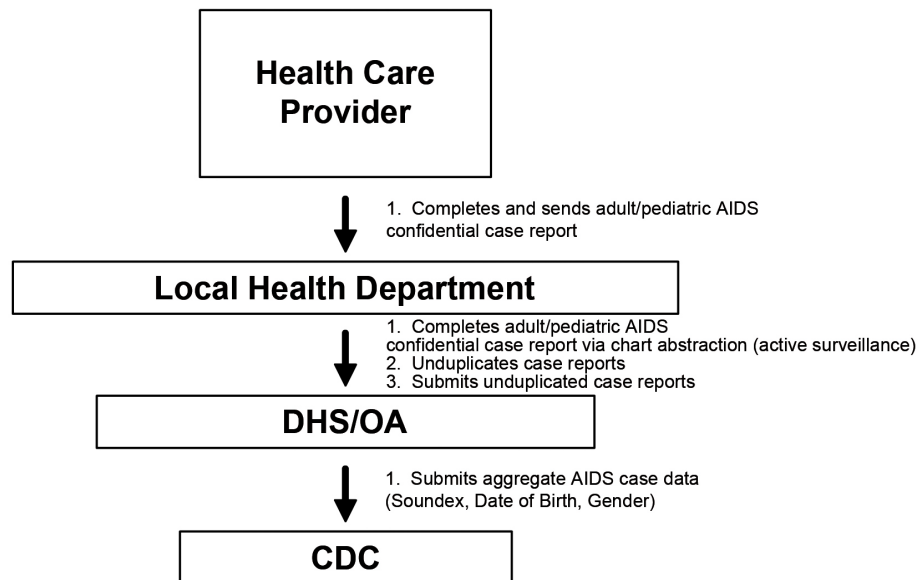
Since 1983, HARS database has undergone many changes, such as altering the data collected to accommodate AIDS case definition changes and adding new variables to reflect the need for more information. To date, over 600 fields are present in the database. Several historical events have occurred which impact how trends in cases are interpreted. In 1985, an AIDS case was defined by the CDC as being infected with HIV and having one of a variety of infections known today as opportunistic infections (such as *Pneumocystis carinii* pneumonia [PCP] and Cytomegalovirus [CMV]). Also in 1985, the HIV Enzyme-Linked Immunoabsorbant Assay (ELISA) test was licensed, and the government began recommending free, anonymous HIV testing. The goal was to decrease HIV transmission through blood donations by encouraging people who may have engaged in risky behavior to learn their status before donating blood. More locally, California passed legislation to establish publicly-funded alternative testing sites.

Data Collection and Management

These sites provide free and anonymous HIV testing in every health jurisdiction with a blood bank.

In 1993, the AIDS case definition was again revised by the CDC, this time to include having a documented HIV infection and one of the following: 1) a CD4⁺ T-lymphocyte count below 200 cells per microliter or less than 14 percent of total lymphocytes; 2) definitive diagnosis of invasive cervical cancer, pulmonary tuberculosis, or recurrent pneumonia; or 3) presumptive diagnosis of pulmonary tuberculosis or recurrent pneumonia. In 1993, HARS software was changed to allow collection of both HIV and AIDS data (although HIV data was not collected in California until 2002). Another major change in HARS database took place in early 2003, involving race and ethnicity. Race and ethnicity became two different variables allowing for identification of Latino cases. A multiple race category was also added to the form, and the Asian/Pacific Islander category diverged into two separate categories. These changes are important to note, as they will affect how trends in AIDS cases are interpreted.

Figure 1: The AIDS Reporting System in California



California Department of Health Services, Office of AIDS

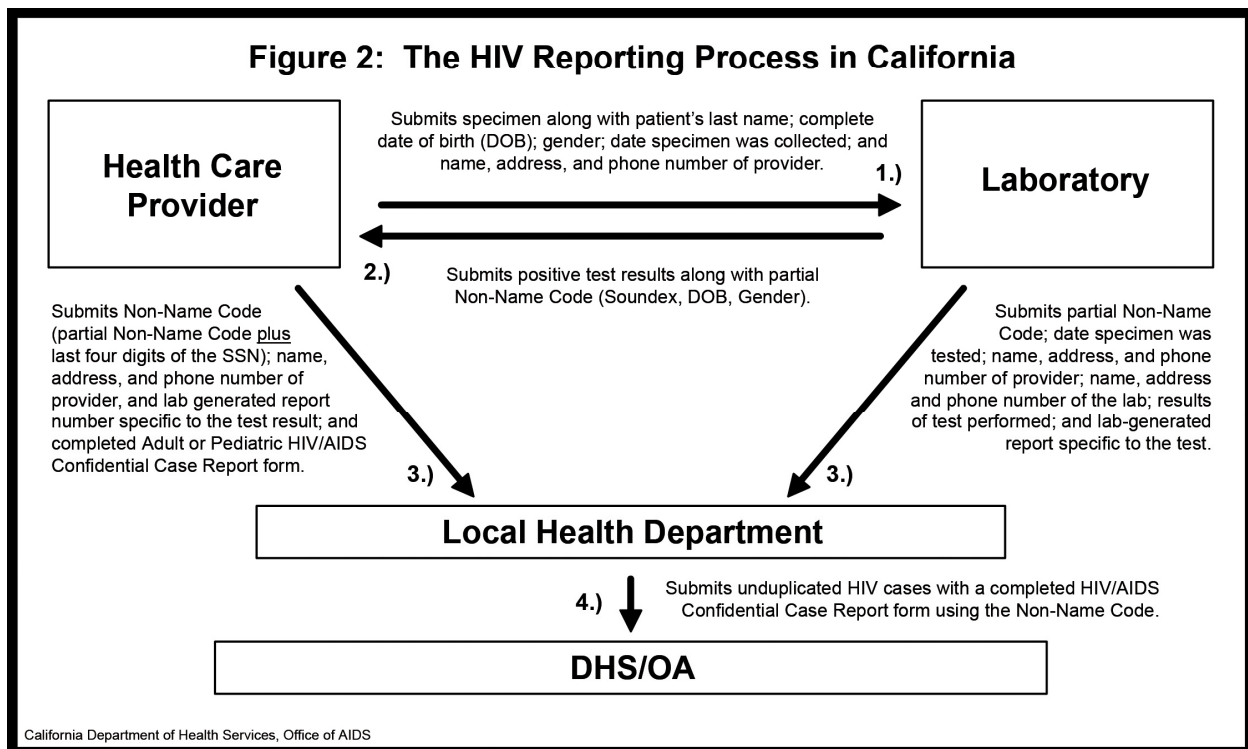
HIV Reporting in California

From 1983 until July 1, 2002, HARS in California only collected information on AIDS cases. HIV infection in the absence of an AIDS diagnosis was not a reportable condition in California during this period. The lack of HIV reporting limited OA's understanding the HIV/AIDS epidemic, since the typical amount of time it takes for HIV to progress to AIDS varies from individual to individual. To this end, AIDS cases reported in a given year could reflect HIV infections that occurred many years prior to the date of the AIDS diagnosis. Furthermore, with the advent of the highly active

Data Collection and Management

antiretroviral therapy (HAART) in late 1995, individuals began living with HIV without progressing to AIDS for a much longer period of time, and AIDS surveillance was no longer an accurate estimate of prevalence and incidence of HIV infection in the state.

HIV infection, the precursor to AIDS, became reportable by Non-Name Code in July 2002 (California Code of Regulations, Title 17, Sections 2641.5–2653.2). The 17-digit HIV Non-Name Code includes: the soundex code (four-digit code derived from the letters of the patient's last name; the patient's date of birth (mm/dd/yyyy); the patient's gender (M, F, M to F, F to M); and the last four digits of the patient's Social Security Number (SSN). Both health care providers and public health laboratories are required to report positive HIV results to the local health department using a Non-Name Code. The local health department matches laboratory reports and physician reports within their jurisdiction. If data are missing, the local health department contacts either the laboratory or the physician's office. Health department surveillance staff may conduct chart reviews to obtain any missing data. The local health department submits a list of unduplicated HIV confidential case report forms to the state health department. State surveillance staff contact the local health department if any reports are incomplete and need follow-up.



Data Collection and Management

Mexico's HIV/AIDS Surveillance System⁵⁸

Although Mexico first began diagnosing AIDS cases in 1983, a formal surveillance system was not established until 1986. Since then, the surveillance system has undergone many adaptations to address the needs arising from this dynamic epidemic, including changes in AIDS case definitions and the incorporation of HIV case reporting and behavioral surveillance.

The first stage of AIDS surveillance in Mexico, the period between 1981 and 1984, focused on collecting data to obtain a better understanding of the distribution and frequency of AIDS cases. Beginning in 1985, serological studies began, and the questionnaires used during these studies later became the first sentinel surveillance questionnaires. In 1987, predictions of AIDS cases and new HIV infections for 1988 and 1991 were made. During this period, HIV sero-studies were also carried out among blood donors, both paid and voluntary, as a result of the high number of AIDS cases reported among this population. The situation prompted legislation forbidding remunerated blood donations and requiring the screening of all blood products.

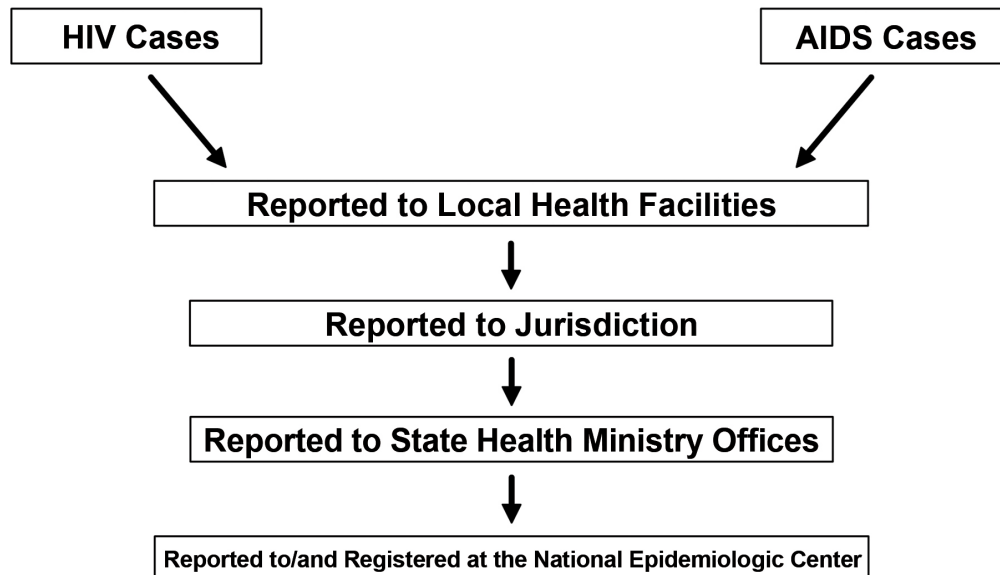
In 1990, the General Direction of Epidemiology (DGE) of Mexico published the first manual on HIV/AIDS surveillance. This manual, revised in 1998, outlines current epidemiological reporting obligations for the Mexican states. As described in these guidelines, surveillance priorities are based on HIV and AIDS case detection and follow-up partner tracing and notification, and HIV sentinel surveillance among pregnant women and members of risk populations. In addition, the manual calls for a review of death certificates to identify AIDS-related deaths.

Health care providers are required to report positive HIV tests as well as AIDS cases to the local health jurisdiction (Figure 3). When a new HIV or AIDS case is detected and confirmed by Western blot, providers must collect basic demographic information from the patient, including name, gender, age, occupation, and educational level. Limited behavioral information is also collected. At this time, physicians or nurses attempt to identify the mode of exposure. This information is received by the state health secretariat before it is sent to the central public health offices in Mexico City. Partner tracing and notification is the responsibility of the institution where the case was originally identified. Like partner notification in many other countries, either the patient or the health care facility can notify partners. Health care facilities in some states in Mexico are currently conducting confidential partner notification.

The review of death certificates is carried out at the federal level, and in mid-1998 the Mexican Secretary of Health established a new system for the surveillance of mortality: the Epidemiological and Statistical Mortality System. Information in this system flows according to the same pathway as HIV/AIDS cases (Figure 3). Through a computer-based system, information on death certificates flows from the jurisdiction where the death occurred all the way to the federal level. This system documents and stores, with a delay of two and one-half months, all AIDS-related deaths occurring in the country.

Data Collection and Management

Figure 3: The HIV and AIDS Reporting Structure in Mexico



National Center for the Control and Prevention of AIDS, Mexico (CENSIDA).

Sentinel surveillance began in 1988, when basic demographic and behavioral information was collected from members of risk populations, such as MSM, female sex workers (FSW), prisoners, and hemophiliacs. In addition, seroprevalence studies were carried out among cadavers and neurological patients or patients in psychiatric wards. Prior to 1990, sentinel surveillance had been implemented in 18 states of the Mexican Republic. However, it was not until 1990 that sentinel surveillance was formally implemented as part of the surveillance guidelines in Mexico. These guidelines for sentinel surveillance were based on the World Health Organization Global Programme on AIDS guidelines. Through March 1995, more than 55,000 individuals were tested. Sentinel surveillance was under the jurisdiction of DGE until 1995, when it was transferred to the National AIDS Programme, CENSIDA, known as CONASIDA until 2001.

Sentinel surveillance is currently carried out among specific populations such as pregnant women, FSW, and injection drug users (IDUs). Questionnaires are administered to collect information on age, education, health status (including a history of sexually transmitted infections), sexual practices (including sexual orientation and frequency of condom use), occupational risk, and exposure to or engagement in high-risk behaviors (including relations with someone who is HIV positive, same sex or bisexual practices, injection drug use, history of blood transfusion, hemophilia, and sex work). Special sections of the survey instruments are included for prisoners and IDUs, where information is collected on types of sexual relations they have and other risk behaviors, including types of drugs injected, sharing of drug equipment, and cleaning of needles. Individuals are targeted at specific facilities that serve these populations, such as specialized sexually transmitted infectious disease clinics for FSW as well as

Data Collection and Management

maternal and child health clinics. Following guidelines established by the Pan American Health Organization, all information is name-linked and confidential.

The current behavioral surveillance efforts began in 1985. During this time, serological and behavioral studies were carried out among gay and bisexual men in Mexico City. Although these initial behavioral studies were informative, small sample sizes did not allow results to be extended to the population as a whole. The questionnaires used to collect behavioral information during these studies, however, served in the development and implementation of the behavioral questionnaires used in the existing sentinel surveillance system.

Between 1987 and 1988, a series of knowledge, attitude, and practice questionnaires were administered to members of the general population over 15 years of age in Mexico City. The purpose of this first round of questionnaires was to measure the general knowledge of the population about AIDS and prevention methods. Information was collected from newspapers and telephone and in-person interviews. Results from these studies served as the basis for the development of interventions that were more focused on the specific information needs of the population groups studied. The results also fed into the development of behavioral questionnaires for use in the sentinel surveillance system.

The Mexican behavioral surveillance system is currently undergoing changes. The development and implementation of an HIV behavioral surveillance system for Mexico has two phases. Between March and September 2000, the Mexican National Institute of Public Health, in collaboration with CENSIDA and DGE, completed the first phase. This first component aimed to provide a better understanding of trends over time and behaviors that drive the epidemic in the country. Unlike serological surveillance, this component not only focused on collecting information from past events, but also provided information on future events, such as the current prevalence of risk behaviors that facilitate the transmission of HIV. The first phase included four main activities: 1) a literature search of HIV behavioral studies carried out in Mexico and Latin America between 1990 and 2000; 2) a revision and comparison of methods and instruments used in HIV behavioral studies; 3) a rapid assessment of the health surveillance systems in three states of the Mexican Republic: Hidalgo, Morelos, and Puebla; and 4) the development of behavioral surveillance questionnaires.

The objectives of the rapid assessments were to: 1) determine the extent to which states can comply with the current DGE surveillance requirements; 2) determine the extent to which epidemiological information arising from the current surveillance system is used in program planning; and 3) assess the capacity for and interest in incorporating behavioral surveillance into the existing surveillance system.

The second phase of the project, currently in progress, includes validation of the behavioral surveillance instruments and piloting of a behavioral surveillance protocol. This process began in June 2001, and work was carried out in three states of the Mexican Republic: Morelos, Puebla, and Michoacan. In each of these states, the

Data Collection and Management

behavioral surveillance questionnaires were administered to and validated by a representative sample of each specific population of interest (youth, migrants, FSW, and MSM). A population-mapping exercise was also carried out in these areas. In total, over 11,000 questionnaires were administered, with an average of 2,280 questionnaires for each specific population. Work with IDUs was initially planned to be developed in two states of the republic, but is being conducted in only one, the state of Chihuahua, specifically Ciudad Juárez, at the U.S.-Mexico border.

In parallel with these activities, DGE has initiated a new simplified HIV surveillance system. Similar to their simplified surveillance system for common illnesses, such as diarrheal infections, this system collects risk behavior information from individuals who access health care facilities. Mexico has a large number of trained health professionals at these facilities. Based on the information collected, these professionals determine the individual's risk of HIV infection. Individuals ranked as high risk for HIV are referred to HIV testing sites. With strong national support from CENSIDA and DGE, this simplified HIV surveillance system is currently being validated in several health care facilities and is being considered as an additional strategy for the collection of behavioral information, particularly in rural areas.

Section II:

HIV/AIDS STATISTICS IN CALIFORNIA AND MEXICO

HIV/AIDS Statistics

Statistical Methods

AIDS case data collected in California and Mexico are presented in this section. For both California and Mexico data, three types of information are provided: cumulative AIDS cases, presumed currently living AIDS cases, and trends in AIDS over the past two decades of the epidemic. California AIDS data for this report were obtained from HARS, and include cases through December 31, 2000, as reported by February 1, 2002. Analyses were conducted using Statistical Analysis System (SAS) 8.0 (Cary, NC, U.S.A.). Mexican AIDS data were obtained from the National Registry of AIDS Cases of Mexico and include cases through December 31, 2000, as reported by December 31, 2001. This information was processed using Statistical Package or the Social Sciences (SPSS) version 9. Analysis of data began early 2002. Both sets of data go through December 31, 2000, to allow a two-year lag time for cases to be reported to state and federal entities. California and Mexico data were imported to Microsoft Excel 2000 to create graphs to illustrate the AIDS case data.

AIDS data are presented in four subsections: 1) AIDS cases in California; 2) AIDS among Hispanics in California; 3) AIDS among Hispanics of Mexican Descent in California; and 4) AIDS cases in Mexico.

AIDS Cases in California

Data for all of California are presented in order to provide a complete picture of the AIDS epidemic in California.

AIDS Among Hispanics in California

The “race” field of the HARS database was used to provide case distributions by race/ethnicity and to allow analyses of Hispanic AIDS cases in the second section. The race/ethnicity field was coded according to classifications provided by CDC as of 2000: Hispanic versus non-Hispanic White, Black, Asian/Pacific Islander (API), and American Indian/Alaska Native (AI/AN). It should be noted that there is potential for misclassification by race/ethnicity. The health care provider records this data element with other demographic data. Methods for determining race/ethnicity for clients of one racial/ethnic group, as well as determining primary race/ethnicity for individuals of mixed race/ethnicity, is not standardized for providers. Therefore, race/ethnicity for cases may not be as valid than if standardized guidelines for determining race/ethnicity were given to, and used by, providers.

AIDS Among Hispanics of Mexican Descent in California

The HARS dataset includes an “expanded race” field for Hispanics. This field allows for determination of region of descent for Hispanic AIDS cases. Responses coded as “other” for this field were used in order to determine region of descent for Hispanic cases for which region of descent was not specified. Some analyses stratified by ethnic subgroups of Hispanic AIDS cases are presented. It is important to note that since this field is optional for providers, a large percentage of data on Hispanic subethnicity is missing. The California Master Death (CMD) file was not used to obtain ethnicity and subethnicity for those AIDS cases for which these data are missing. This decision was

HIV/AIDS Statistics

made on the basis that CMD file has data only for individuals who have died. If this file were used to obtain this missing information, only information for cases that died would be added, possibly yielding an inaccurate distribution of ethnic subgroups. For instance, a certain subgroup of AIDS cases may have higher death rates and, therefore, may be overrepresented in the overall distribution of AIDS cases. Using this data to fill in race/ethnicity and subethnicity could have yielded an inaccurate distribution of presumed living and death cases across racial/ethnic groups. Furthermore, country of birth was not used to determine ethnicity or subethnicity for those cases where these data are missing, because country of birth may not accurately reflect ethnic descent. Doing so could have been especially problematic if the database includes individuals of Mexican descent whose parents migrated to the United States and gave birth while in the United States.

Although certain analyses indicate that it would be safe to assume that the majority of Hispanic AIDS cases for which subethnicity is missing are most likely of Mexican descent, most analyses are conducted among those cases for which Mexican descent is specified. When looking at trend data for Hispanic AIDS cases by region of descent, the increase in percentage of cases of Mexican descent closely mirrors the decrease in percentage of Hispanic AIDS cases of unspecified subethnicity over time. The “country of birth” field in HARS was analyzed for AIDS cases of Mexican descent to show AIDS case distribution for those born in Mexico and those born in the United States. Unfortunately, this is the most specific subgroup analysis possible for cases of Mexican descent. Information on migratory status or length of time in the United States is not collected during AIDS surveillance and is addressed by the authors in the recommendation section.

AIDS Cases in Mexico

The final statistics section includes AIDS case data from Mexico’s registry. It is important to keep in mind that these data may include AIDS data for individuals whose region of descent may not be Mexico, but may include some cases of Central or South American descent.

Statistical Analyses

The data presented are divided into three sections: 1) cumulative AIDS cases; 2) individuals presumed to be living with AIDS; and 3) trends in AIDS case data. Each type of data if presented alone would not be sufficient to provide a complete picture of the epidemic and to appropriately equip HIV decision and policy makers. It is important, for example, to know which group AIDS disproportionately affects, as well as the quantity of people affected in each group. Both statistics provide different but equally important information. In instances where numbers for each distribution could not be presented in graphs, every attempt was made when only presenting percent distributions, to present enough data to assure that the percentages could be converted into frequencies with one calculation.

HIV/AIDS Statistics

Cumulative AIDS Data

Cumulative data provide information about the extent to which AIDS has affected various groups. The data presented are from the beginning of the epidemic through December 31, 2000. It is important to note that although AIDS did not become a reportable disease until 1983, there are a few cases in California with a date of diagnosis before 1983. These are individuals who most likely presented to their health care provider with symptoms, and who were later confirmed to have AIDS when HIV and CD4 testing became available. It is important to note that cumulative data are, in part, a reflection of population growth and decline over time, and may not indicate which groups have been disproportionately affected.

Data on Individuals Presumed Living with AIDS

In addition to cumulative data, it is equally critical to examine data on individuals presumed to be currently living with AIDS. Such data can inform decisions around care and treatment services, as well as guide prevention programs aimed at encouraging safe behaviors among individuals known to be HIV positive. They allow for comparison to the current year's population demographics, which provides a more accurate picture than only presenting AIDS cases. For these reasons, data on AIDS cases presumed living as of December 31, 2000, are presented for each section. Where possible, 2000 Census figures are also provided to allow for comparison of AIDS case distributions to 2000 population distributions.

For California AIDS cases, the HARS data field, "living status," was updated using the CMD file since death cases are registered with the state. This was done in order to determine whether individuals diagnosed with AIDS have died or can be presumed living. Since there is no structured mechanism to determine whether cases are still living, individuals for whom a death record has not been entered into HARS are presumed living. In Mexico, the "living status" field is constructed differently. The Mexican National Registry of Cases has a field called "evolution," which includes the following values: "Living" (if the person is known to be living when the case is reported, or if there is no record of death); "Deceased" (when death is confirmed either in the case report or by death certificate); or "Unknown" (when it cannot be determined whether the person is living or deceased). Therefore, data presented from Mexico includes three categories for living status.

AIDS Trend Data

AIDS trend data provide a longitudinal assessment of the epidemic especially when presented alongside population trends. It is critical to be informed of how the epidemic is changing. Assessing trends in new annual cases and trends among subgroups of the population can indicate the direction of the epidemic and which populations may need to be targeted for prevention and care. For these reasons, in addition to information on currently living cases, AIDS trends data are presented.

Trend analyses are based on year of diagnosis, since use of the case report year presents a distorted view of the evolution of the epidemic. Few California AIDS cases have a date of diagnosis prior to 1983 and since the first case in Mexico was diagnosed

HIV/AIDS Statistics

in 1983, trend data for overall California cases, Hispanic cases in California, and cases in Mexico are shown beginning with cases diagnosed in 1983. Although the first AIDS case of Mexican descent was diagnosed in 1983, since data with specified subethnicity prior to 1987 in California are sparse, trend data for these cases are shown beginning in 1987.

Incidence data, which account for changes in population distribution, are presented. Whereas, trends in new annual cases provide information about the changes in the quantity and distribution of annual cases, equally important, incidence data provide useful proportionality estimates to place AIDS case trends in perspective. Although it may be tempting to use such trends for assessing effectiveness of HIV prevention programs, much caution should be used. Since these are not trends in HIV data, changes in AIDS cases and distribution, instead of indicating a decrease in infection, may indicate an increase in treatment (access or efficacy) which would delay progression of HIV to AIDS, thereby resulting in a decline in AIDS cases if HIV infection remains stable.

Where possible, trends in death cases and survival analyses are also presented. These data can reflect treatment access, adherence, and effectiveness. It is important to note, however, that observations may be confounded by other factors such as late diagnosis and better reporting of death cases over the years.

Characteristics of AIDS Cases

The main characteristics examined in each subsection include gender, age at diagnosis, current age (for cases presumed living), race/ethnicity (subethnicity for Hispanic cases, not provided for Mexico), mode of exposure, and county/region of residence at diagnosis. Residence at diagnosis was examined among cumulative cases to see which counties in California and which states in Mexico had the greatest number of cases over time, and among cases presumed living to estimate where most cases are most likely living. Trend analyses of “residence at diagnosis” were also conducted for new cases over time to assess which areas have had the greatest number of newly diagnosed cases. It is important to note that these analyses do not indicate which counties in California and regions in Mexico are disproportionately affected because incidence by California county or Mexico region is not presented. Furthermore, it is important to note that individuals with AIDS may have moved out of their original county/state of residence at diagnosis so county/state distribution for individuals living or presumed living figures may not be as precise as could be if migration information were collected for AIDS cases. Not all characteristics are provided in each subsection; however, where possible, all characteristics presented for more specific groups were presented for the larger group so that the data could be assessed appropriately.

HIV Estimates

Since HIV has only been reportable in California since July 2002, we will not be fully examining HIV data in this report. With the advent of unique non-name reporting in

HIV/AIDS Statistics

July 2002, HIV information will be available in future reports. HIV data to date can be found at: <http://www.dhs.ca.gov/AIDS/Statistics/HIVcase2004.htm> (California) and at www.ssa.gob.mx/conasida (Mexico).

AIDS CASES IN CALIFORNIA

HIV/AIDS Statistics

AIDS CASES IN CALIFORNIA

As this report is presenting a description of the epidemic in both Mexico and California, data for all racial/ethnic groups in California are presented. Presentation of these data provides a complete picture of the AIDS epidemic in the state and gives context for the AIDS case data among Hispanics and specifically cases of Mexican descent presented subsequently.

Cumulative Cases

From March 1978 to December 31, 2000:

- Cumulative AIDS cases: 121,443.
- Number of deaths among AIDS cases: 75,331 (62 percent of all AIDS cases).
- Number of individuals with AIDS presumed living: 46,112 (38 percent of all AIDS cases in California).

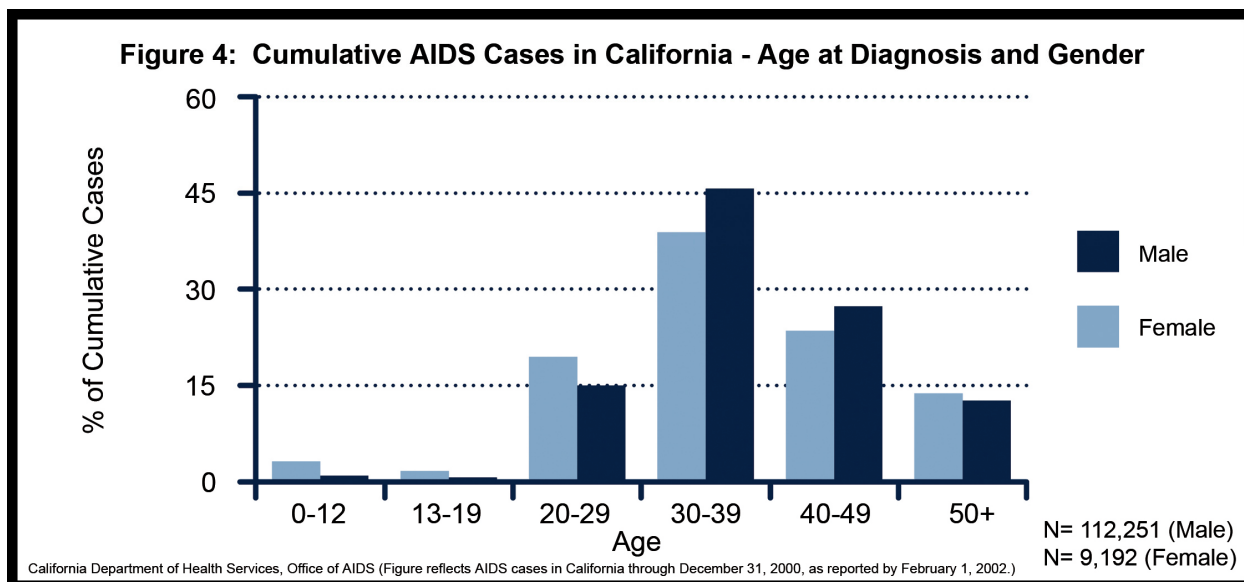
Gender

- Of all AIDS cases reported in California, 92.4 percent are male and 7.6 percent are female (data not shown).

Age at Diagnosis

- Approximately 44.8 percent of individuals diagnosed with AIDS were diagnosed between the ages of 30-39 (data not shown).
- Less than one percent of cases were diagnosed before the age of 20.
- More females than males have been diagnosed between the ages of 20-29 (20 percent compared to 15 percent among men).
- The proportion of cases diagnosed under the age of 13 is also more than ten times higher among females (3.2 percent compared to 0.3 percent among males; Figure 4).
- Hispanics have been significantly younger at AIDS diagnosis than any other racial/ethnic group.

HIV/AIDS Statistics

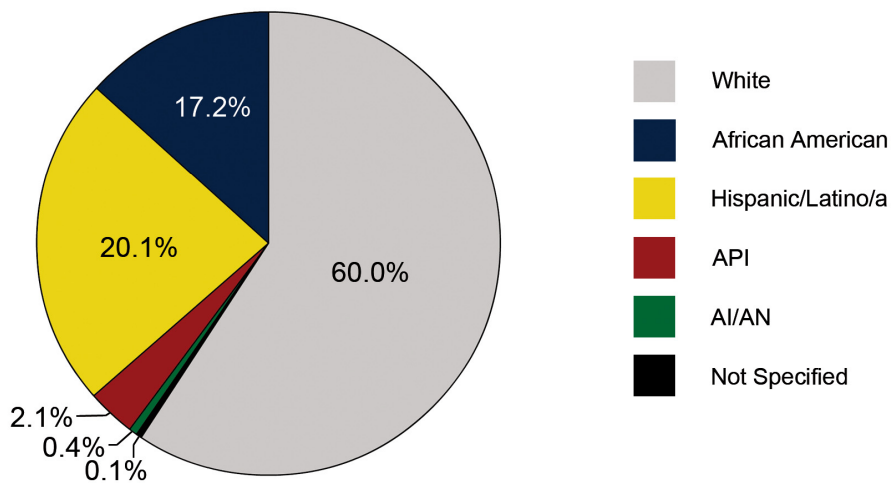


Race/Ethnicity

- Whites represent the largest number of cumulative AIDS cases reported since 1980 (59.9 percent), followed by Hispanics (20.1 percent), then by non-Hispanic African Americans (17.2 percent; Figure 5).
- American women represent the largest proportion of cumulative female AIDS cases (36.1 percent). However, among cumulative male AIDS cases, African Americans represent less than one-sixth of cases (15.7 percent; Figure 6).
- Compared to males, there is a significantly lower percentage of White cases among females (35.9 percent compared to 61.9 percent among males; Figure 6).
- Although non-Hispanic Whites represent the majority of the cumulative AIDS cases (Table 6), among cumulative AIDS cases diagnosed in those under the age of 30, Hispanics represent the highest percentage (Table 1). It is important to consider whether this indicates that Hispanics under the age of 30 have less access to diagnosis and treatment, which would enable HIV to progress to AIDS at a higher rate compared to other racial/ethnic groups, or if it indicates that Hispanics under the age of 30 are more likely to engage in high risk behaviors.
- White males and females under the age of 30 in California represent similar percentages of cumulative AIDS case diagnoses in their respective gender cohorts. However, the percentage of all females in California diagnosed with AIDS under the age of 30 represented by African American females is 68 percent higher than the percentage that African American males represent in their parallel gender cohort (Table 1).

HIV/AIDS Statistics

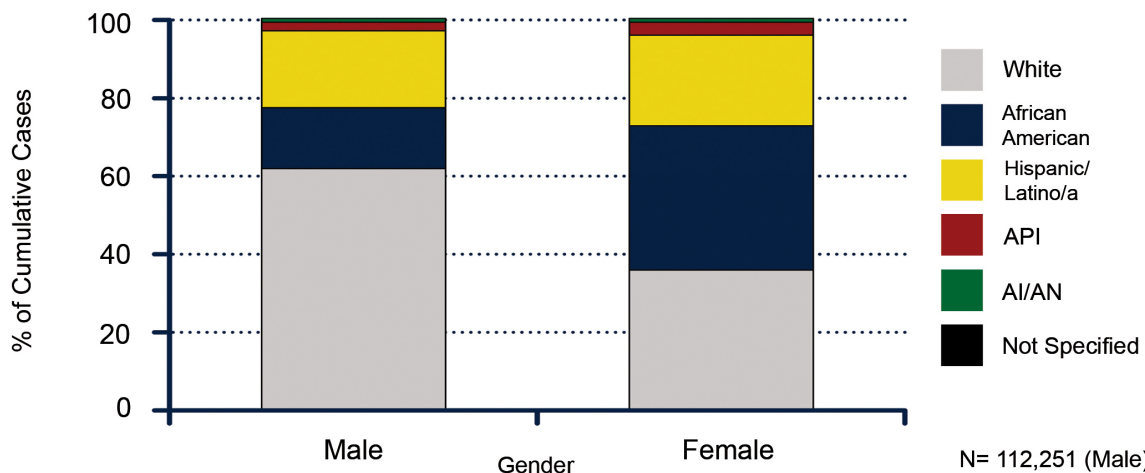
Figure 5: Cumulative AIDS Cases in California - Race/Ethnicity



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

N= 121,443

Figure 6: Cumulative AIDS Cases in California - Race/Ethnicity and Gender



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

N= 112,251 (Male)

N= 9,192 (Female)

HIV/AIDS Statistics

Table 1: Cumulative AIDS Cases Diagnosed Under the Age of 30 - Race/Ethnicity and Gender

Race-Ethnicity		
	Males	Females
White	27.8%	25.6%
African American	19.2%	32.2%
Hispanic/Latino/a	48.1%	38.6%
API	3.3%	2.9%
AI/AN	0.7%	1.5%
Not Specified	0.1%	0.2%

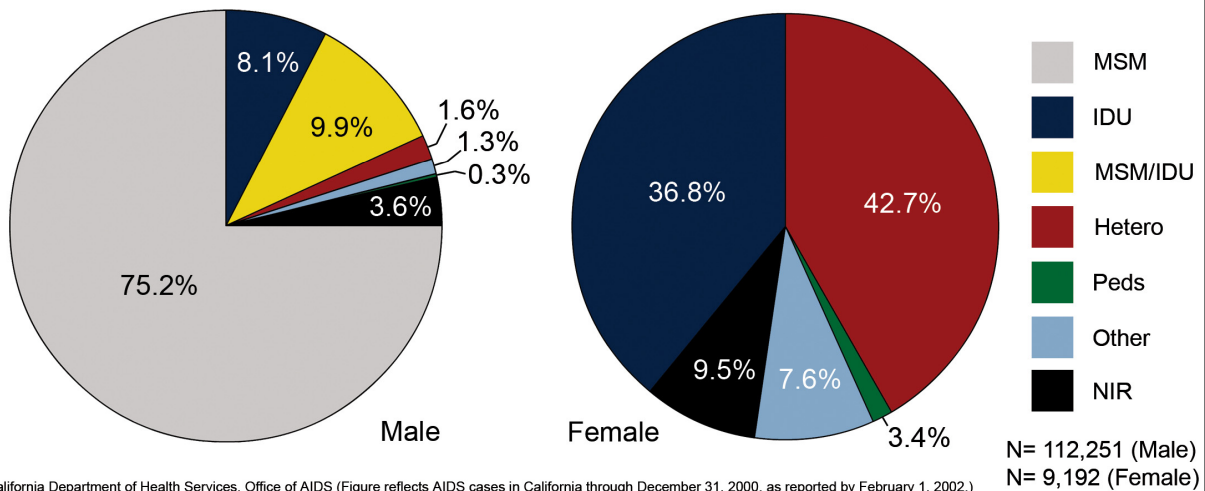
California Department of Health Services, Office of AIDS (Table reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Mode of Exposure

- MSM constitutes the primary mode of exposure (65.9 percent) for California's cumulative AIDS cases followed by injection drug use (10.3 percent; data not shown).
- The percentage of cumulative cases due to pediatric exposure is approximately 0.6 percent, and that of cases of non-identified risk (NIR) is 4.1 percent (data not shown).
- Among men, MSM accounts for more than three-quarters (75.2 percent) of all reported exposures (Figure 7).
- Among women, heterosexual contact is the primary mode of exposure, accounting for 42.7 percent of all cumulative female cases (compared to 1.6 percent of all male cases). Over one-third (36.7 percent) of all female cases are women infected through injection drug use (Figure 7).
- Among all individuals diagnosed when they were 20 years of age or older, MSM accounts for more than 65 percent (data not shown). Injection drug use and MSM/IDU are the next most common modes of exposure for individuals diagnosed between the ages of 20 and 49, ranging from 7.5 to 12.0 percent (data not shown).
- Among all racial/ethnic groups except African Americans, the majority of cases (54 to 77 percent) are found among MSM (Figure 8). For African Americans, MSM make up 48 percent of the AIDS cases (Figure 8).
- Exposure resulting from injection drug use is found to be more common among African Americans than any other racial/ethnic group (24.2 percent compared to 6.4 percent among Whites and 10.6 percent among Hispanics; Figure 8).

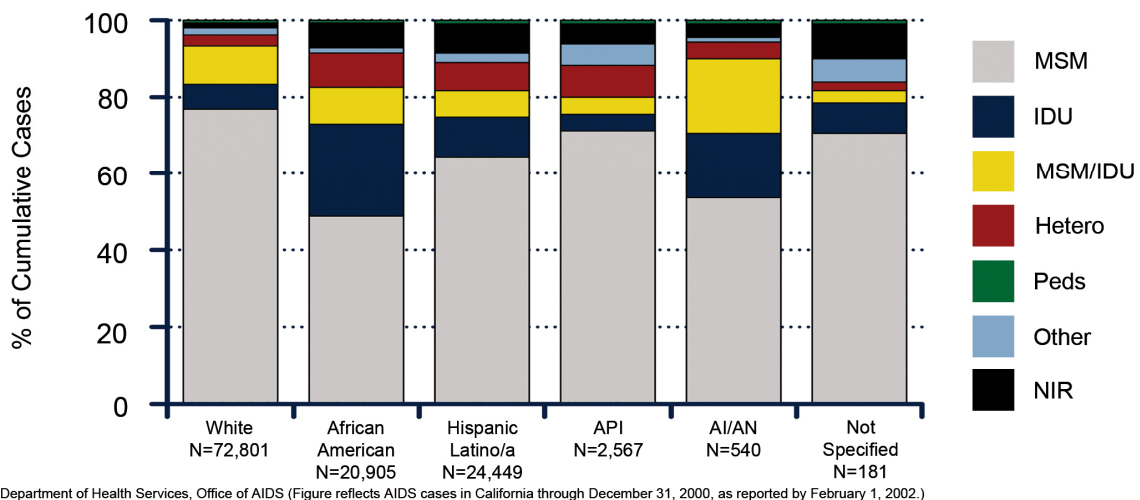
HIV/AIDS Statistics

Figure 7: Cumulative AIDS Cases in California - Mode of Exposure and Gender



*NIR indicates "Non-Identified Risk."

Figure 8: Cumulative AIDS Cases in California - Mode of Exposure and Race/Ethnicity



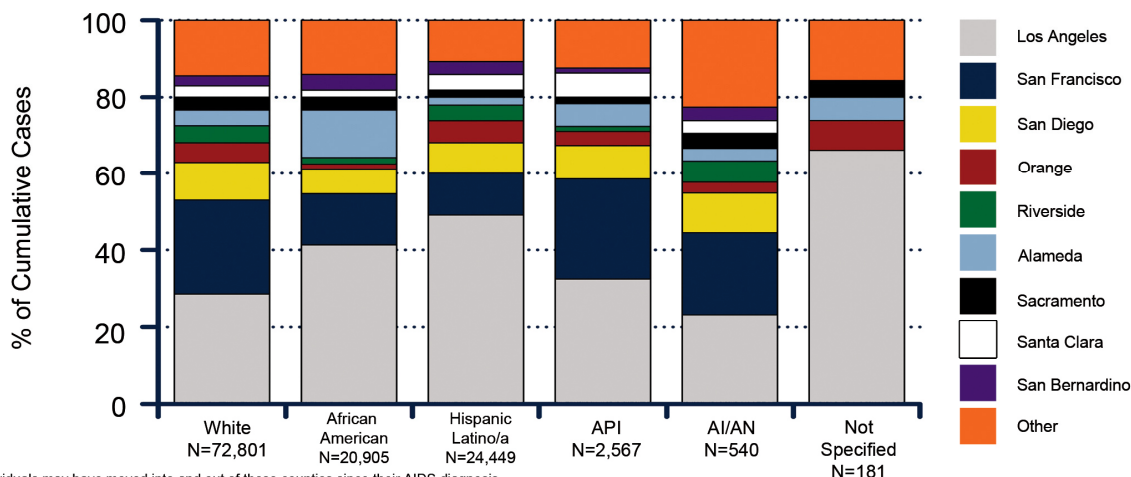
*NIR indicates "Non-Identified Risk."

HIV/AIDS Statistics

County of Residence at Diagnosis

- Nearly 70 percent of individuals with AIDS were residing in one of four counties at the time of their diagnosis: Los Angeles (35.3 percent), San Francisco (20.3 percent), San Diego (8.9 percent), and Alameda (4.9 percent). Most of the other individuals with AIDS lived in Orange, Riverside, Santa Clara, Sacramento, and San Bernardino Counties at the time of their diagnosis (data not shown).
- For Whites, African Americans, Hispanics, and API in California, over half of all AIDS cases (54.0 to 59.9 percent) lived in one of two counties at the time of their diagnosis: Los Angeles and San Francisco (Figure 9).
- For AI/AN, 45 percent resided in San Francisco or Los Angeles Counties at the time of diagnosis. This group had the greatest percentage of AIDS cases located in San Diego County (11.3 percent) than that of any other race/ethnic group (other groups ranged from zero to 9.7 percent; Figure 9).
- African Americans represented the largest percentage of AIDS cases residing in Alameda County than any other racial/ethnic group (12.1 percent compared to a range of 2.3-6.0 percent for other racial/ethnic groups).
- Approximately 66.3 percent of individuals of other or unknown race/ethnicity were residing in Los Angeles County when they were diagnosed with AIDS (Figure 9).
- Note that these percentages may to some degree reflect the geographical distribution of the general and of racial/ethnic populations in California.

Figure 9: Cumulative AIDS Cases in California - County of Residence at Diagnosis and Race/Ethnicity



Note: Individuals may have moved into and out of these counties since their AIDS diagnosis.
California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

HIV/AIDS Statistics

Individuals Living with AIDS*

Number of individuals living with AIDS: 46,112 (38 percent of cumulative cases in California). Total population in California in 2000: 33,871,648 (U.S. Census Bureau, 2000 Estimates).

Gender

- Of the 46,112 individuals living with AIDS in California, 89.8 percent are male and 10.2 percent are female (data not shown).
- Of the 16,874,892 males living in California (U.S. Census Bureau, 2000 estimates), approximately 0.25 percent (41,407) are living with AIDS compared to 0.03 percent (4,705) of the 16,996,756 females in California.

Current Age

- Approximately 95 percent of Californians living with AIDS are 30 years of age or older, with the highest concentration of cases between the ages of 30-49 (74.9 percent). When compared to the state population, the number of AIDS cases in this 30-49-year-old age range is disproportionately high; 30-49 years of age represent only 31 percent of the state population; data not shown).
- The age distributions of males and females living with AIDS are similar. The majority of cases for both groups are between the ages of 30-49 (75.3 percent of and 71.4 percent, respectively). These figures are disproportionately high for this age range when taking into account the age distribution of the male and female Californian population in 2000. Census estimates show that 31.5 percent of the male population and 30.6 percent of the female population are between 30-49 years of age (Figures 10 and 11).
- Among women, a relatively larger proportion (11.4 percent) of living AIDS cases are under 30 years of age, compared to less than five percent of male cases (Figures 10 and 11).

* Presumed living as of December 2000

HIV/AIDS Statistics

Figure 10: Males Living with AIDS and the Male Population in California - Current Age

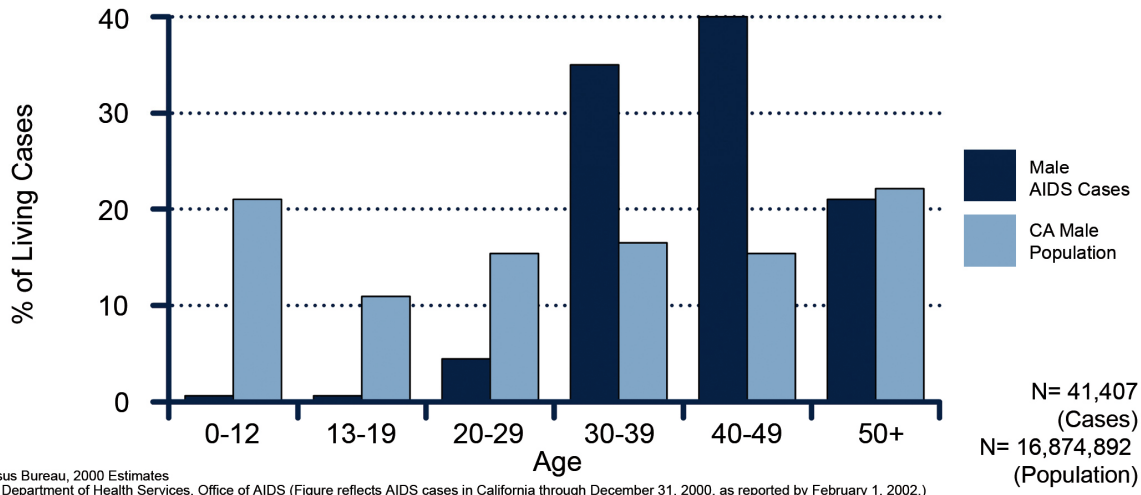
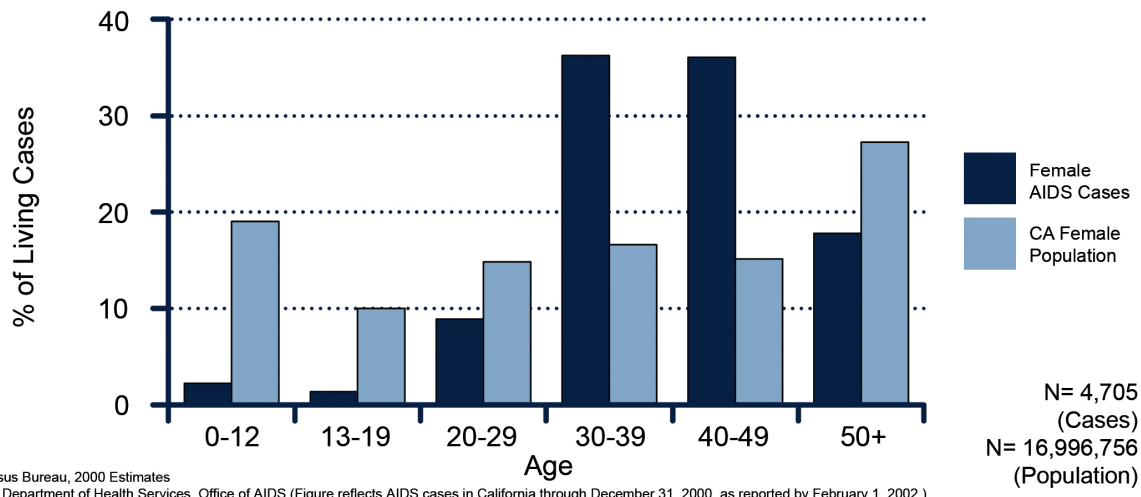


Figure 11: Females Living with AIDS and the Female Population in California - Current Age

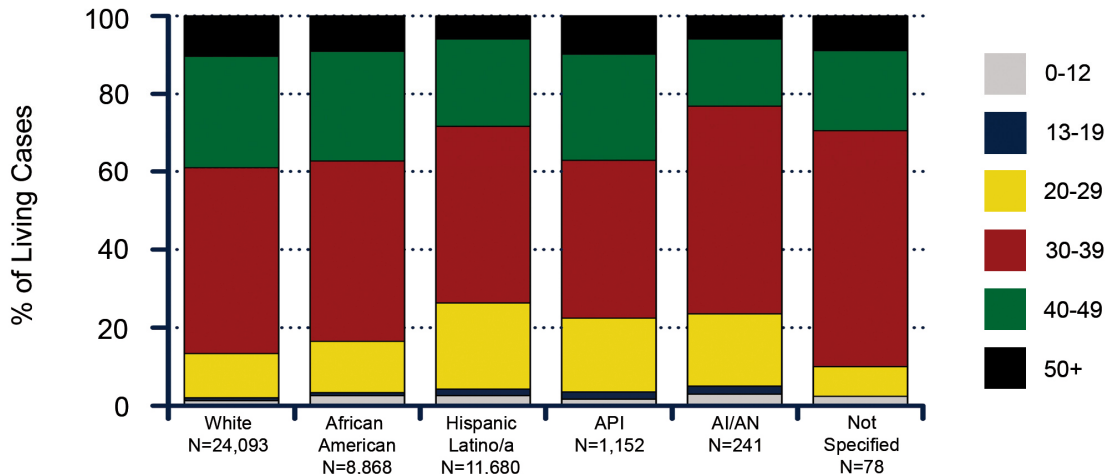


Age at Diagnosis

- The majority of individuals living with AIDS (46.9 percent) were diagnosed between the ages of 30-39 (data not shown).
- The age distribution is fairly similar across racial/ethnic groups (Figure 12).
- A slightly larger percentage (24.9 percent) of Hispanics were diagnosed between the ages of 20-29 compared to other racial/ethnic groups (White: 13 percent, African American: 15.6 percent, API: 19.7 percent, and AI/AN: 20.8 percent; Figure 12).

HIV/AIDS Statistics

Figure 12: California Data: Individuals Living with AIDS - Age at Diagnosis and Race/Ethnicity

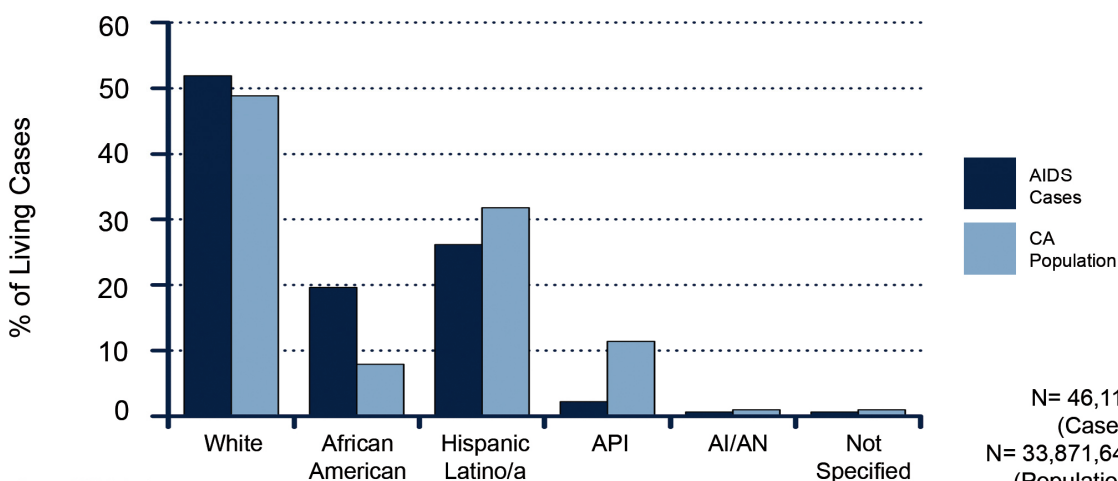


California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Race/Ethnicity

- Whites represent the largest number of individuals living with AIDS (52.3 percent). Hispanics represent the second largest (25.3 percent), followed by African Americans (19.2 percent; Figure 13).
- Although African Americans represent the third largest group of individuals living with AIDS at 19.2 percent, they only constitute 6.7 percent of California's population. Whites represent a slightly greater proportion of living AIDS cases than they do California's general population (52.3 compared to 47.8 percent; Figure 13).

Figure 13: California Data: Individuals Living with AIDS - Race/Ethnicity



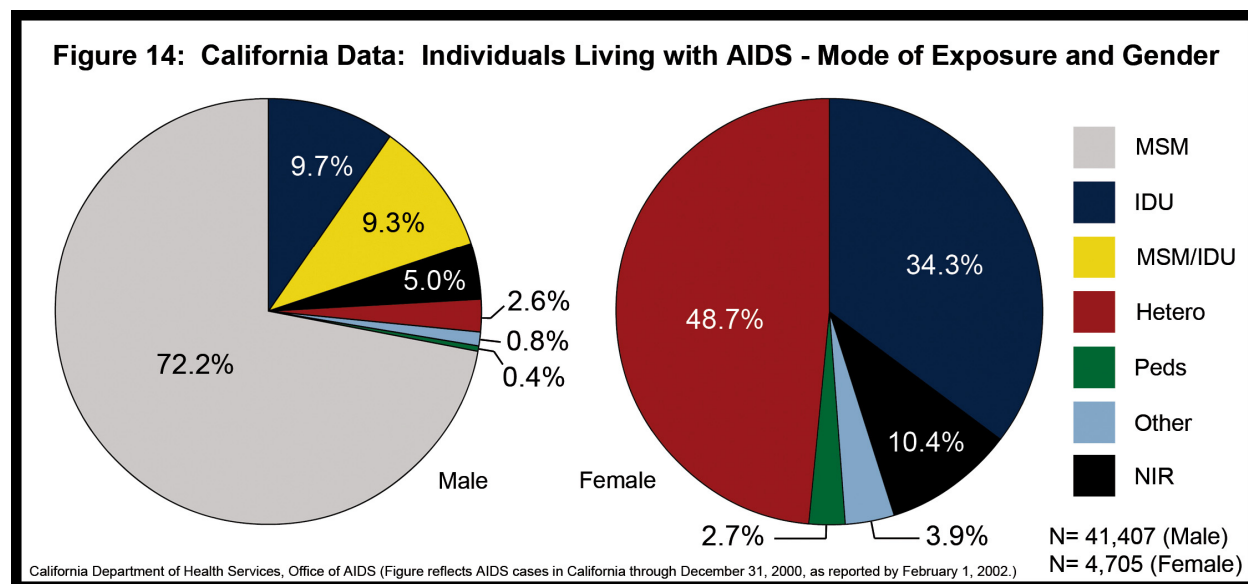
U.S. Census Bureau, 2000 Estimates

California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

HIV/AIDS Statistics

Mode of Exposure

- Nearly two-thirds (64.9 percent) of individuals living with AIDS are males who were exposed through same gender sex. Injection drug use accounts for 12.1 percent of exposures while heterosexual contact accounts for 7.1 percent (data not shown).
- The majority of males living with AIDS were exposed through same gender sex (72.2 percent). Approximately 9.7 percent were exposed through injection drug use (Figure 14).
- Approximately half (48.7 percent) of females living with AIDS were exposed through heterosexual contact and roughly a third (34.3 percent) were exposed through injection drug use (Figure 14).



*NIR indicates "Non-Identified Risk."

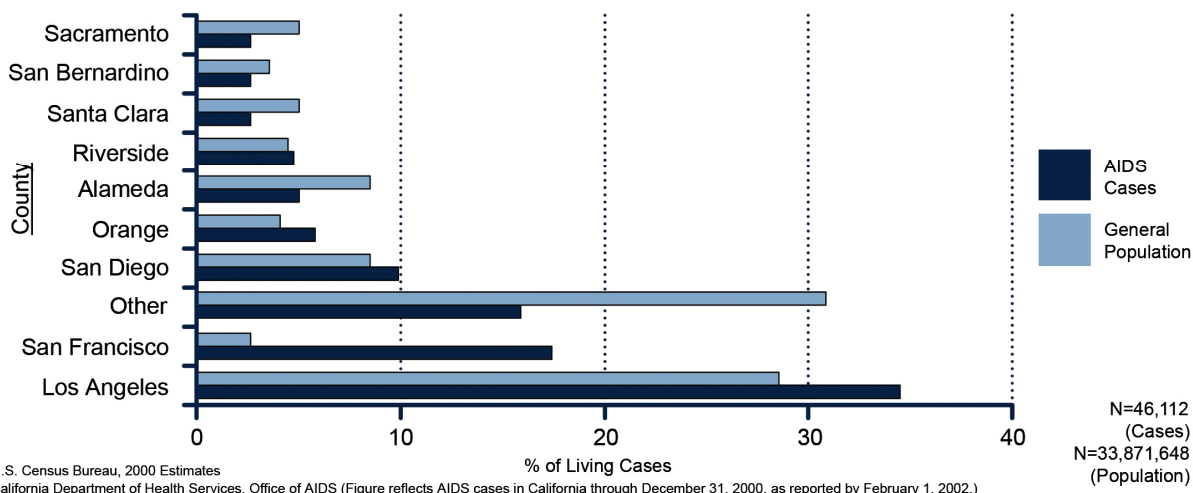
County of Residence at Diagnosis

- Roughly 71 percent of all individuals living with AIDS were residing in one of five counties at the time of their diagnosis: Los Angeles (34.1 percent), San Francisco (16.6 percent), San Diego (9.8 percent), Orange (5.7 percent) and Alameda (5.1 percent; Figure 15).
- For Riverside, Orange, San Diego, San Francisco, and Los Angeles Counties, the percentage of California's AIDS cases living in these counties at the time of diagnosis is greater than the percentage of the total general population living in these counties. The most marked difference is seen in San Francisco, which houses 2.3 percent of the general population of California, but was listed as county of diagnosis for 16.6 percent of the AIDS cases in California (Figure 15). It is important to note that these cases may have moved since the time of diagnosis.
- About half of Hispanics living with AIDS resided in either Los Angeles or San Francisco Counties at diagnosis. For Whites, African Americans, and AI/AN,

HIV/AIDS Statistics

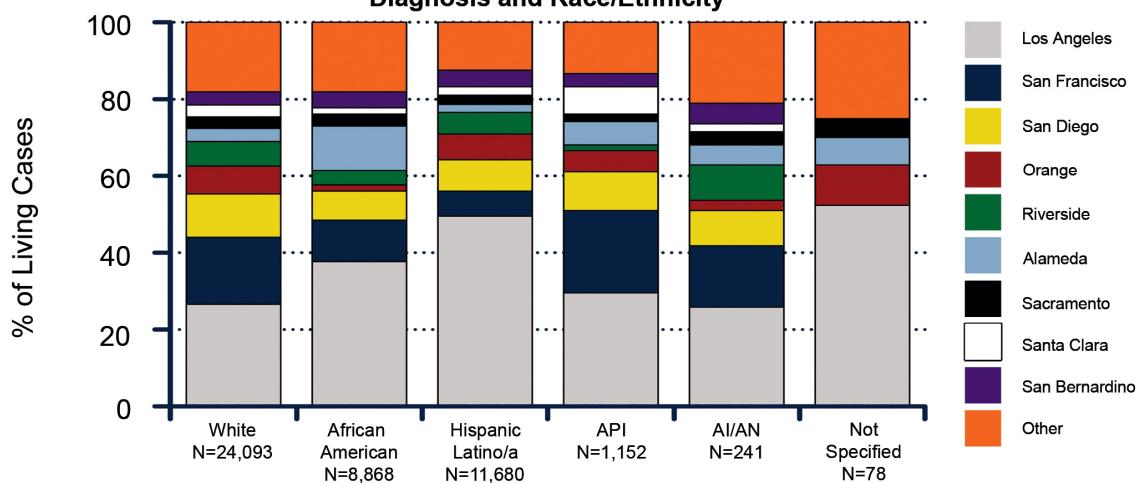
half of the cases resided in one of three counties at diagnosis: Los Angeles, San Francisco, and San Diego. Of the cases for which race and ethnicity was not specified, approximately 53.9 percent resided in Los Angeles County (Figure 16).

Figure 15: California Data: Individuals Living with AIDS - County of Residence at Diagnosis



Note: These percentages may to some degree reflect the geographical distribution of the general population in California.

Figure 16: California Data: Individuals Living with AIDS - County of Residence at Diagnosis and Race/Ethnicity



Note: These percentages may to some degree reflect the geographical distribution of the general and of racial/ethnic populations in California.

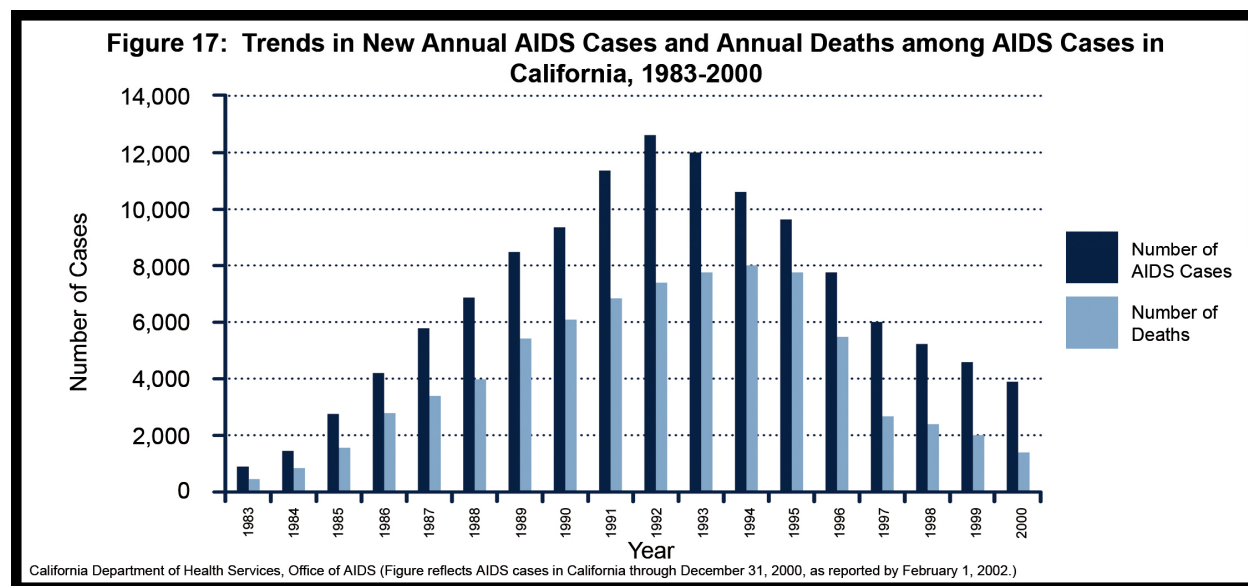
HIV/AIDS Statistics

AIDS Trends in California

Overall Trends

Trends in New Annual AIDS Cases

- The number of new annual AIDS cases in California rose steadily until 1992 (12,436 cases). After 1992, the number of AIDS cases first decreased rapidly and then more slowly, reaching 3,880 cases in 2000 (Figure 17). With the advent of new medications, the decrease in HIV cases seen may be a reflection of not only a decrease in the number of individuals becoming infected with HIV, but also an increase in the amount of time it takes for HIV to progress to AIDS among individuals infected with HIV.
- The gender distribution of newly diagnosed AIDS cases has remained relatively stable from 1983 through 2000. There has been a slight but steady decrease in the percentage of total new annual cases that are male, from 98.5 percent in 1983 to 85.9 percent in 2000 (data not presented).



Incidence

- AIDS incidence in California peaked in 1992 at 39.9 cases/100,000 after which it began to decrease steadily (Table 2).
- In 2000, the incidence proportion (number of AIDS cases per 100,000 population) was 11.5 (Table 2).

HIV/AIDS Statistics

Table 2: Annual AIDS Incidence in California, 1983-2000

Year of Diagnosis	AIDS Incidence (Cases per 100,000)	Year of Diagnosis	AIDS Incidence (Cases per 100,000)
1983	2.8	1992	39.9
1984	5.5	1993	37.9
1985	9.8	1994	32.8
1986	15.1	1995	29.9
1987	20.8	1996	23.3
1988	24.0	1997	17.9
1989	28.5	1998	14.8
1990	30.3	1999	13.3
1991	36.5	2000	11.5

U.S. Census Bureau, 2000 Estimates
California Department of Health Services, Office of AIDS (Table reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Trends in Annual Deaths Among AIDS Cases

- The number of deaths among persons with AIDS increased steadily until 1995, after which time it began to decrease rapidly, reaching 1,405 deaths in 2000 (Figure 17). The shift in death trends starting in 1995 may in some part be the result of the advent of new multi-drug therapies for the treatment of HIV/AIDS.

Median Survival Time (in Years) by Year of Diagnosis

- Median survival times for individuals diagnosed with AIDS have been increasing steadily since 1985. The median survival time increased more than 600 percent from 1.0 year in 1986 to 6.1 years in 1994 (Table 3).

Table 3: Median Survival Time (in Years) by Year of AIDS Diagnosis, 1983-1994

Year of Diagnosis	Median Survival Time (in Years)	Year of Diagnosis	Median Survival Time (in Years)
1983	1.0	1989	1.7
1984	0.9	1990	1.8
1985	0.9	1991	2.0
1986	1.0	1992	2.4
1987	1.4	1993	2.9
1988	1.6	1994	6.1

U.S. Census Bureau, 2000 Estimates
California Department of Health Services, Office of AIDS (Table reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

*Median survival times for AIDS cases diagnosed after 1994 have not been calculated, as more than half of these cases are still living.

HIV/AIDS Statistics

Trends by Age at Diagnosis

Trends in New Annual AIDS Cases by Age at Diagnosis

- Of all individuals newly diagnosed with AIDS, the proportion represented by each age group has not changed significantly over the years (data not presented).
- Californians between the ages of 30-39 have represented the majority of new annual AIDS cases each year, followed by individuals aged 40-49. The percentage of new annual cases in the 30-39 age group has ranged from 43 percent in 1983 to 47.7 percent in 2000. Individuals between 40-49 years of age represented 29.3 percent of all new AIDS cases in 2000 (data not shown).
- The number of AIDS cases diagnosed each year has been about equal for the two age groups of 20-29 and 50 and over. By the close of 2000, these groups accounted for 11.7 and 15.2 percent of all new annual AIDS cases, respectively (data not shown).
- Individuals under age 13 and those aged 13-19 years old accounted for less than one percent of new AIDS cases (0.23 and 0.62 percent, respectively; data not shown).

Trends by Race/Ethnicity

Trends in New Annual AIDS Cases by Race/Ethnicity

- For Whites, Hispanics, and African Americans, the numbers of AIDS cases have steadily increased from 1983 until 1992. Beginning in 1992, the numbers diagnosed each year began to decline for Whites while remaining steady for Hispanics and African Americans. Not until 1995 is there a visible decline in newly diagnosed cases in these racial/ethnic groups (Figure 18).
- The numbers of newly diagnosed AIDS cases that are AI/AN or API have remained relatively stable over the years, between 20-60 and 100-200 cases, respectively (Figure 18).
- Whites have consistently represented more newly diagnosed AIDS cases than any other racial/ethnic group. The percentages of all new cases that were African American or Hispanic were similar until 1995, when Hispanics began to represent more newly diagnosed cases (Figure 19).
- While the percentage of cases represented by Whites has been decreasing steadily (83.2 percent in 1983 to 39.5 percent in 2000), the percentages represented by Hispanics and African Americans have been increasing steadily. The sharpest change is seen among Hispanics who represented 6.5 percent of newly diagnosed cases in 1983 and 33.8 percent of cases in 2000 (Figure 19).

HIV/AIDS Statistics

Figure 18: Trends in New Annual AIDS Cases in California by Race/Ethnicity, 1983-2000

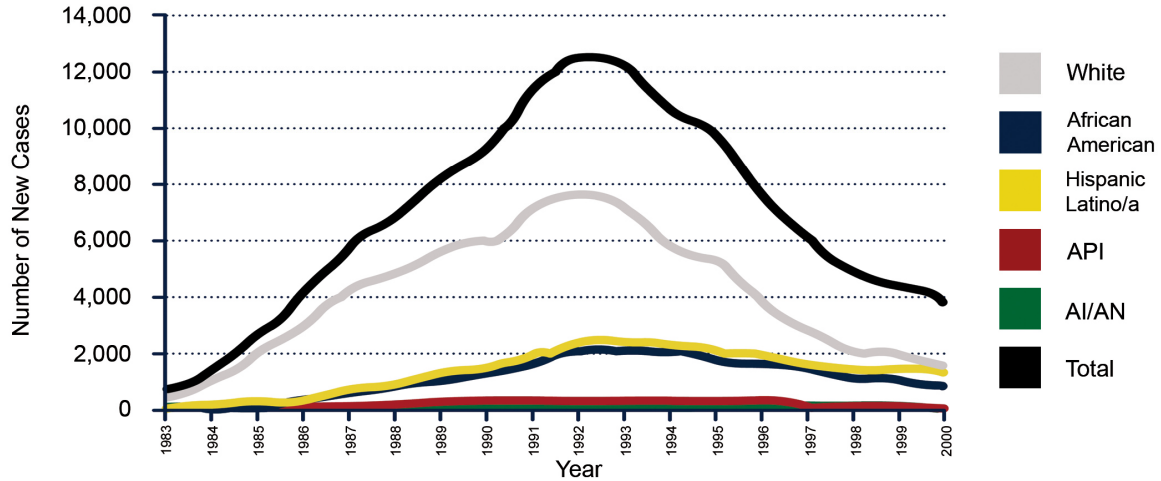
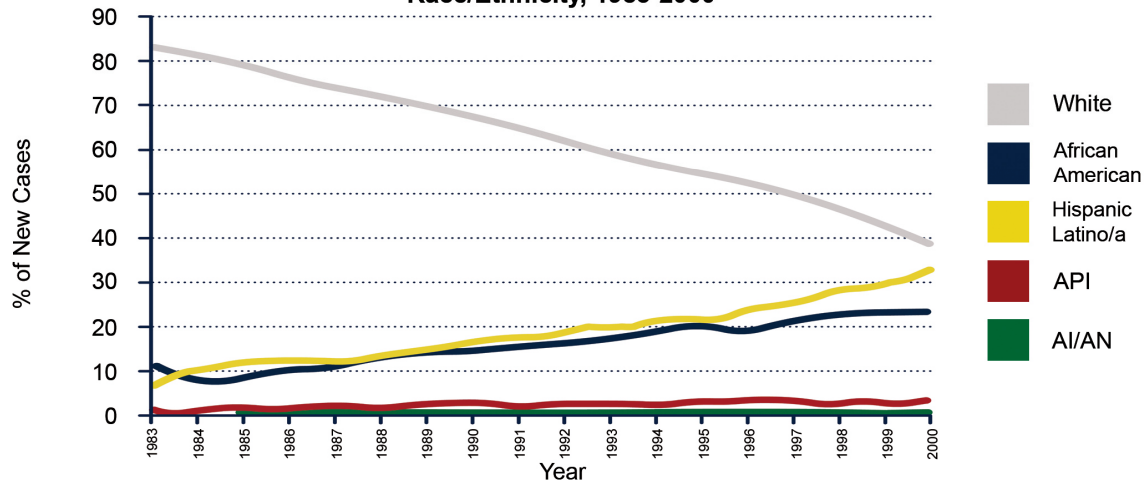


Figure 19: Trends in Percent of Total New Annual AIDS Cases in California by Race/Ethnicity, 1983-2000

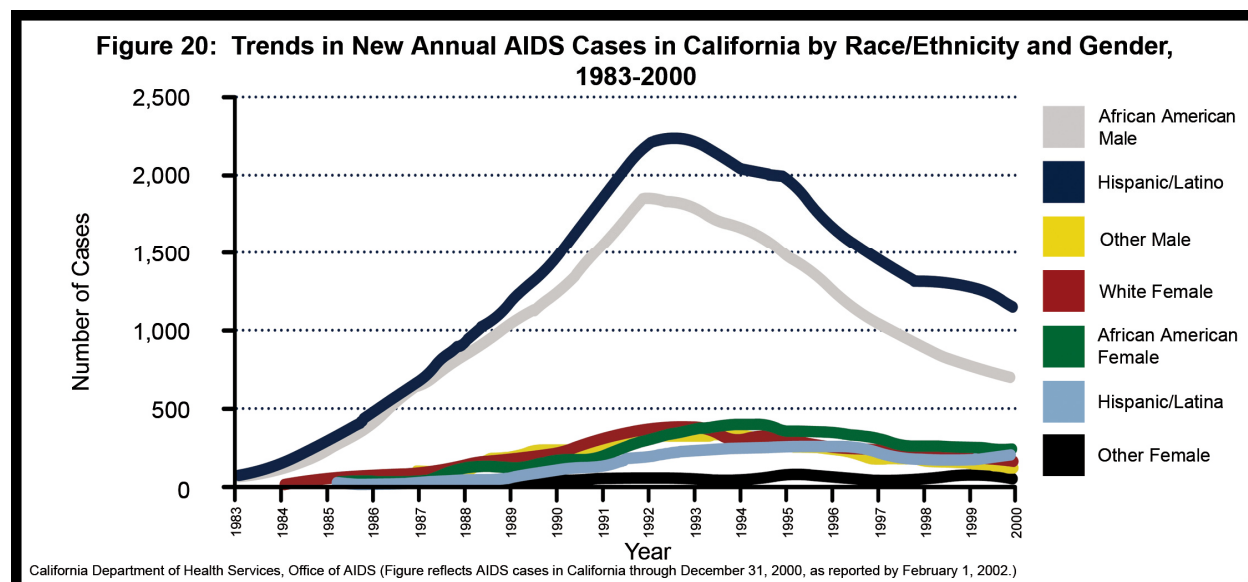


Trends in New Annual AIDS Cases by Race/Ethnicity and Gender

- Whereas, Hispanic males have consistently constituted a larger number of AIDS cases than African American males over the years, African American females have represented a larger number of AIDS cases than Hispanic females. The percentage of female cases represented by African American women has declined slightly since 1998, while the percentage represented by Hispanic women has increased slightly. The numbers, however, are too small to determine accuracy of differences (Figure 20).
- By 1997 both Hispanic and African American females represented a larger percentage of new AIDS cases than API and AI/AN males combined (Figure 20).

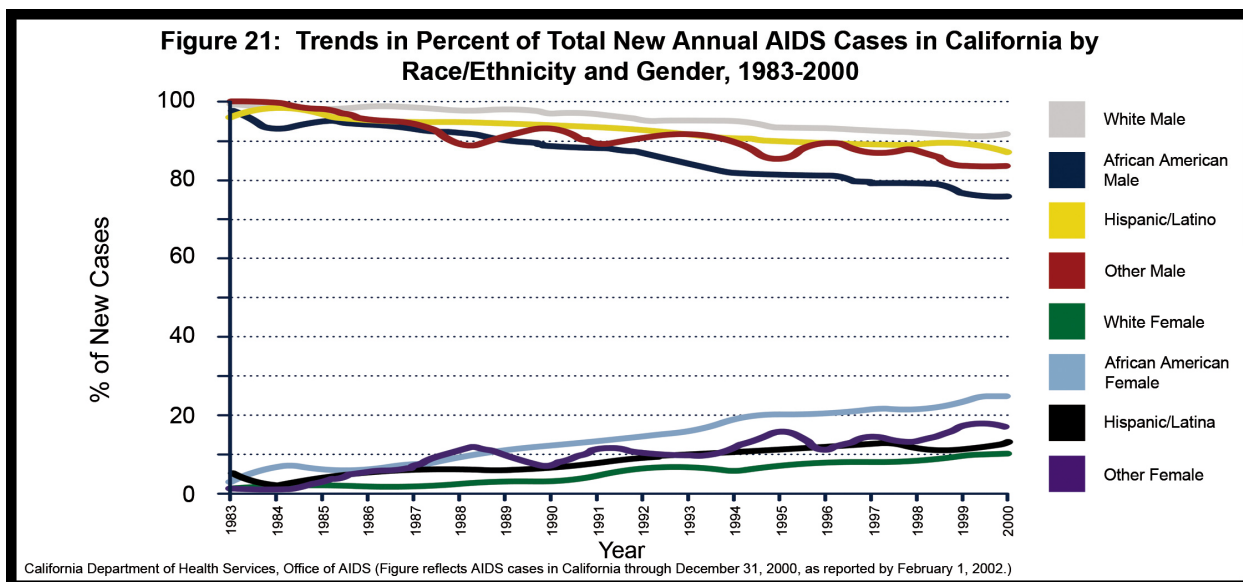
HIV/AIDS Statistics

- The decrease in percentage of male cases has been most dramatic among non-Hispanic African American AIDS cases compared to any of the other racial/ethnic groups (97.2 percent in 1983 to 75.9 percent in 2000; Figure 21).
- The decreases in the percentage of male AIDS cases in each racial/ethnic category essentially indicate that the percentage of cases represented by females has been increasing (Figure 21). The gender distribution of racial/ethnic groups in the general population have not varied much over the years. Therefore, adjusting for population estimates would not greatly affect these distributions.
- Among Hispanic AIDS cases, the percentage of female cases has risen quite substantially, from 4.6 percent in 1983 to 13.2 percent in 2000 (Figure 21).
- The percent increase in cases that are female has been most substantial among African American AIDS cases (2.8 percent in 1983 to 24.1 percent in 2000; Figure 21).
- Overall, the percentage of cases of "other" race/ethnicity represented by females has been increasing, constituting 16.7 percent of cases of other racial/ethnic groups in 2000 (Figure 21).



Note: In order to best graphically present the data for all other racial/ethnic groups, data for White males are not presented. The overall trend for this subgroup is similar to that observed for all White cases presented in Figure 18.

HIV/AIDS Statistics



Note: These percentages may to some degree reflect trends in gender distribution within racial/ethnic subgroups in California.

Incidence by Race/Ethnicity

- Although trends in new annual cases by racial/ethnic group give an idea of the quantity of individuals in those groups affected by AIDS, incidence statistics are useful in helping to assess whether certain populations are disproportionately affected.
- Since 1985, the incidence of AIDS among African Americans has been higher than any other racial/ethnic group. At its peak in 1992, the incidence among African Americans was nearly 2.5 times greater than that seen in the total population. In 2000, the incidence proportion was 39.9 cases/100,000 (Figure 22).
- Incidence trends among Whites have closely followed trends for the total population. The incidence proportion for Whites in 2000 was 9.5 cases/100,000 (Figure 22).
- The incidence of AIDS among Hispanics steadily increased until 1992 with an incidence proportion of 28.4 cases/100,000. In 2000, the incidence among Hispanics was similar to the incidence in the overall population (12 and 11.5 cases/100,000, respectively; Figure 22).
- AIDS incidence among API has been the lowest throughout the years, ranging from 0.1 to 8.9 cases/100,000 (Figure 22). Incidence trends for AI/AN however are difficult to interpret due to a small number of cases.

HIV/AIDS Statistics

Figure 22: Annual AIDS Incidence in California by Race/Ethnicity, 1983-2000

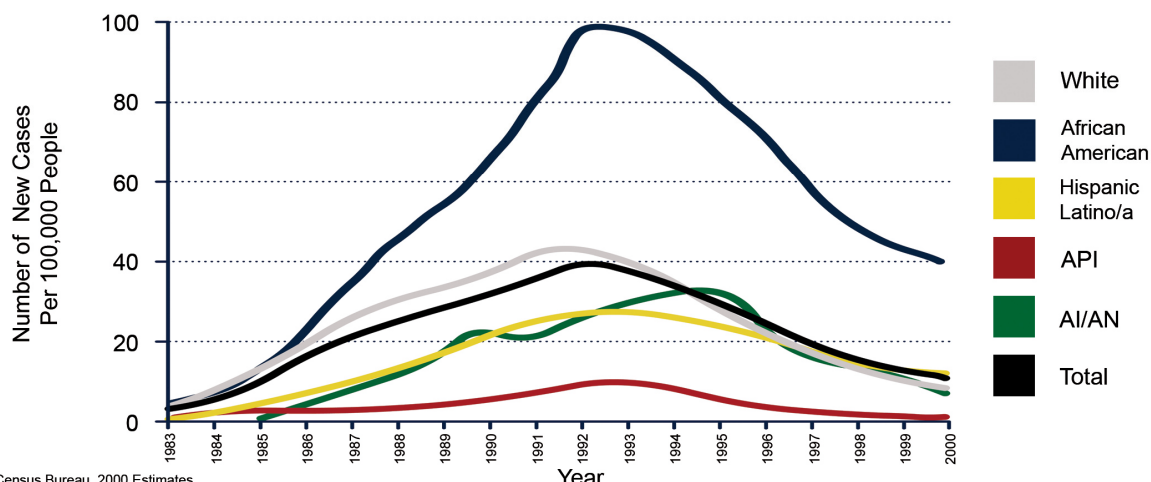
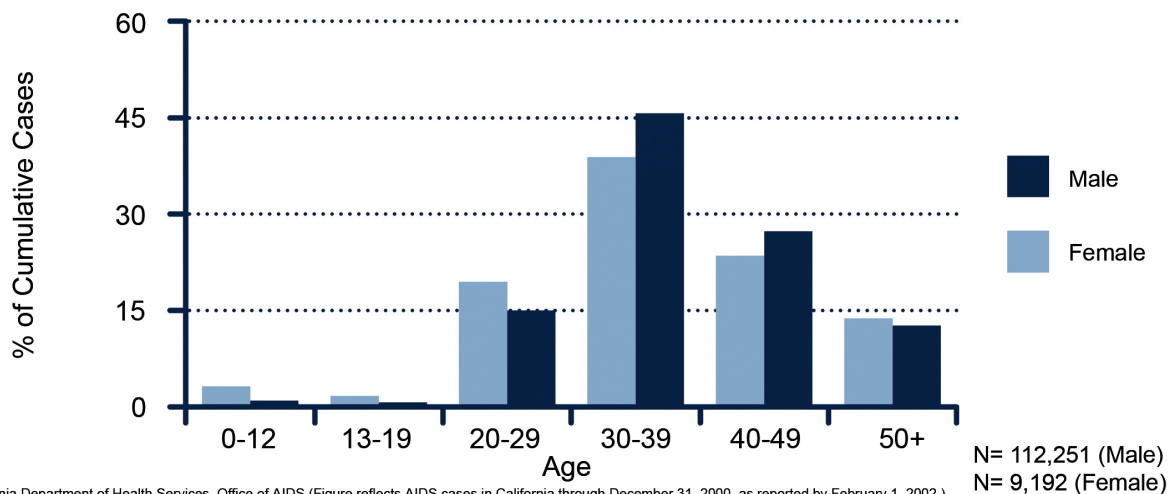


Figure 4: Cumulative AIDS Cases in California - Age at Diagnosis and Gender

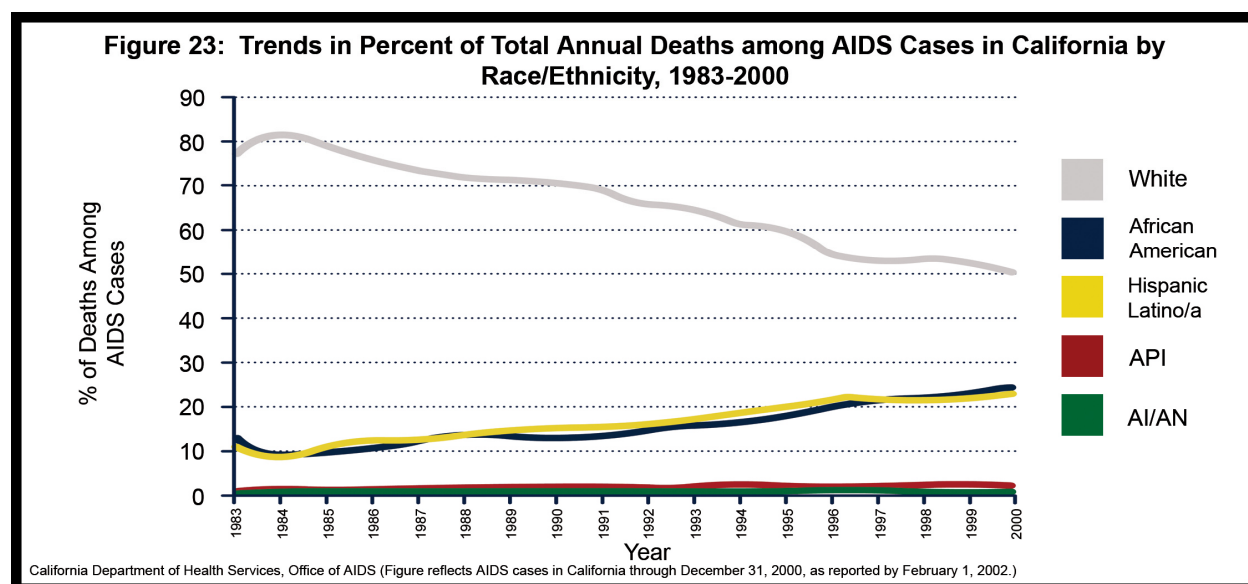


Trends in Annual Deaths Among AIDS Cases by Race/Ethnicity

- Since 1995, all racial/ethnic groups have experienced decreases in numbers of deaths among persons with AIDS. Whites have seen the largest absolute decrease, from 4,525 to 699 deaths in 2000 (an 85 percent approximate decrease; data not shown).
- The trends in the number of deaths seen among Hispanic AIDS cases have been approximately equal to that seen among African American AIDS cases. Deaths for these groups peaked in 1994 at approximately 1,375 and 1,496 and declined to 556 (for each group) in 1997, leveling off to 327 and 341, respectively, in 2000 (data not shown).

HIV/AIDS Statistics

- While the majority of deaths among AIDS cases has consistently occurred among Whites, as have the majority of newly diagnosed cases, the percentage of AIDS deaths represented by White AIDS cases has been decreasing since 1984 (82.4 percent in 1984 to 49.8 percent in 2000; Figure 23).
- The trends in percentage of deaths represented by African Americans is nearly identical to that represented by Hispanics. These percentages have been increasing steadily over the years, from approximately 12.0 percent in 1983 to 24.3 percent in 2000 for African Americans and from 10.6 percent in 1983 to 23.3 percent in 2000 for Hispanics (Figure 23).
- The percentages of deaths represented by both API and AI/AN AIDS cases have consistently been under 3.0 percent (Figure 23).

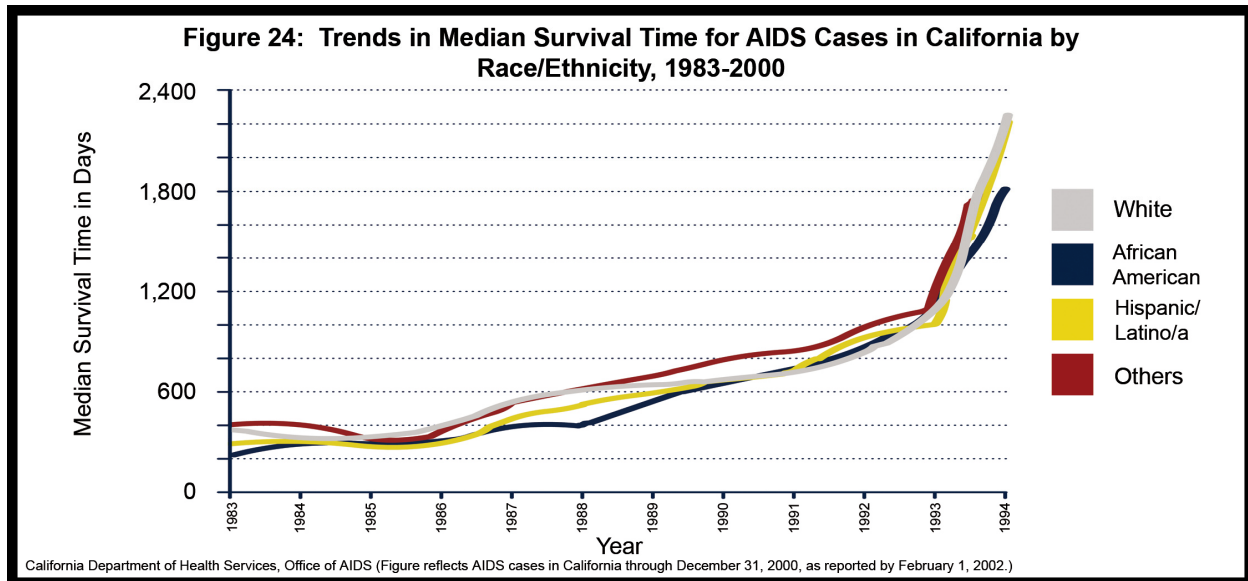


Trends in Median Survival Times by Race/Ethnicity

- Median survival times remained relatively steady for all groups during the early 1980s at between 200 and 400 days. From late 1986 through mid-1993, median survival times increased steadily (Figure 24).
- From mid-1993 through 1994, there were sharp and dramatic increases in median survival times for all groups.
- Overall median survival times in 1994 are more than six times those seen in 1986 (approximately 6.1 years as compared to 1.0 year, respectively).
- Survival trends for Hispanics, Whites, and African Americans, are similar to the survival trends for the entire population of AIDS cases in California (Figure 24).
- Median survival times for API, AI/AN, and non-specified racial/ethnic groups varied tremendously over the years, in large part because of the relatively few numbers of AIDS cases and deaths among these groups (data not presented). These groups with small numbers of AIDS cases were collapsed into a general category, "Other," for purposes of these analyses.

HIV/AIDS Statistics

- These trends should be reassessed in subsequent years to determine whether divergences by race/ethnicity appear. It is important to note that if lower median survival times are observed for certain groups, they could be reflective not only of delayed testing or inaccessibility or less accessibility to treatment, but to possible underreporting of death cases which may result from loss to follow-up.



Note: Median survival times for AIDS cases diagnosed after 1994 have not been calculated, as more than half of these cases are still living. "Other" includes API, AI/AN, and non-specified racial/ethnic groups.

Trends by Mode of Exposure

Trends in New Annual AIDS Cases by Mode of Exposure (data not shown)

Overall

- MSM has been the most common mode of exposure for AIDS cases since the beginning of the HIV/AIDS epidemic.
- Since 1990, the percentage of AIDS cases attributable to heterosexual contact and injection drug use has been steadily increasing. The percentage of AIDS cases attributable to heterosexual contact increased from 2.6 percent in 1990 to 10.6 percent in 2000, while the percentage attributable to injection drug use increased from 8.1 to 14.7 percent between these years.
- Since 1994, there has been an increase in the percentage of new AIDS cases for which mode of exposure has not been identified, from 3.6 percent in 1994 to 12.5 percent in 2000.
- A slight decrease in percentage of new MSM/IDU cases (9.5 to 6.6 percent), is seen between 1990 and 2000.

HIV/AIDS Statistics

Among Males

- Among males, MSM has been the most common mode of exposure among new cases throughout the years. Since 1990, the percentage of new AIDS cases represented by MSM has been decreasing steadily (79.0 percent in 1990 to 63.2 percent in 2000).
- Since 1990, the percentage of male cases that are attributable to heterosexual contact and injection drug use has increased (from 0.9 and 6.2 percent in 1990 to 4.9 and 12.3 percent in 2000, respectively).
- Since 1995, there has been an increase in the percentage of cases for whom risk is not identified (from 4.2 percent in 1995 to 10.9 percent in 2000).
- Other modes of exposure has remained relatively constant.

Among Females

- Among females, heterosexual contact has emerged as the primary mode of exposure among newly diagnosed AIDS cases since 1993, accounting for 18.2 percent of all AIDS cases in 1983 and 43.9 percent in 1993.
- Since 1993, injection drug use has become the second most common mode of exposure, accounting for 18.2 percent of all AIDS cases in 1983 and 38.5 percent in 1993.
- In 2000, 45.6 percent of all new AIDS cases were attributed to heterosexual contact; 29.2 percent were due to injection drug use.
- The percentage of new cases for whom risk is not identified has been increasing since 1993, from 6.6 percent to 22.5 percent in 2000.
- Data before 1993 are difficult to interpret due to the small number of new annual female AIDS cases.

AIDS AMONG HISPANICS IN **CALIFORNIA**

HIV/AIDS Statistics

AIDS AMONG HISPANICS IN CALIFORNIA

Cumulative Hispanic AIDS Cases

From March 1978 to December 31, 2000:

(Note: The first Hispanic AIDS case was diagnosed in 1979.)

- Cumulative Hispanic AIDS cases: 24,449 (20.1 percent of all California AIDS cases).
- Number of AIDS deaths: 12,769 (52.2 percent of all Hispanic AIDS cases; 17.0 percent of all AIDS deaths).
- Hispanics with AIDS presumed living: 11,680 (47.8 percent of all Hispanic AIDS cases; 25.3 percent of all individuals with AIDS presumed living).

Gender

- Of all cumulative Hispanic AIDS cases, 90.9 percent are male and 9.1 percent are female (data not shown).

Age at Diagnosis

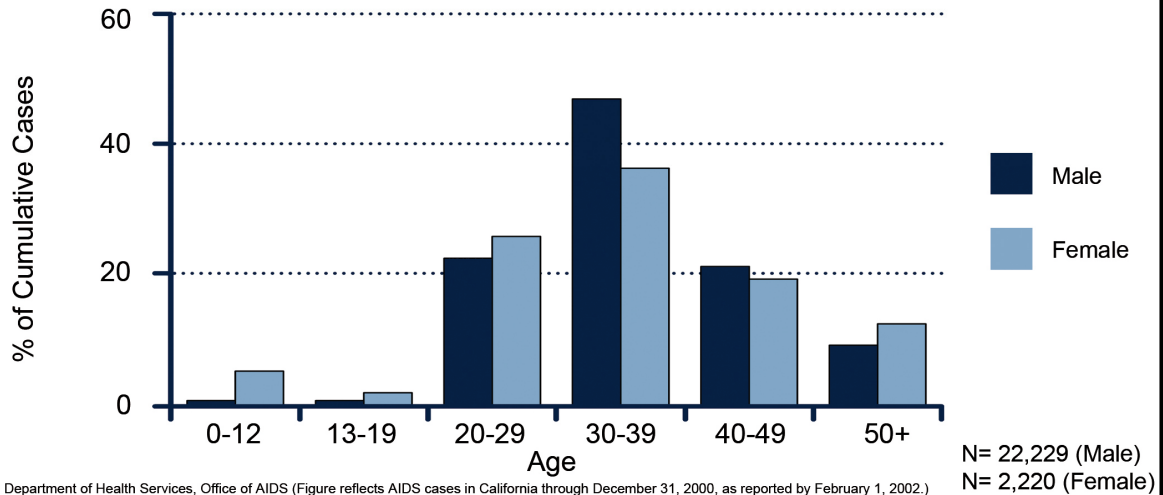
- Approximately 89.4 percent of Hispanic cases were between the ages of 20-49 when diagnosed with AIDS, with the greatest number of cases (45.8 percent) between the ages of 30-39. Roughly 1.6 percent of Hispanics diagnosed with AIDS were younger than the age of 20 when diagnosed (data not shown). Age at diagnosis is slightly younger for Hispanic cases compared to all cases in California.
- As seen among California's AIDS cases, a greater proportion of Hispanic female compared to Hispanic male cases were diagnosed before the age of 20 (6.8 percent of Hispanic women compared to 1.1 percent of Hispanic men). A greater percentage of female compared to male cases were diagnosed after the age of 50 (12.3 percent versus 8.6 percent; Figure 25).

Region of Descent

- Region of descent is not specified for 76.8 percent of Hispanic AIDS cases.
- Of Hispanic cases for which region of descent is specified, 73 percent are descendants of Mexico (Figure 26). This equals 17 percent of all cumulative cases.
- Hispanic cases of other regions of descent (Central America, Caribbean, South America, Spain, and Portugal) account for 6.4 percent of Hispanic cases (data not presented).
- Males account for the majority of Mexican and Central American AIDS cases. The highest proportion of female AIDS cases is seen among cases of Central American decent (17.1 percent; Figure 27).

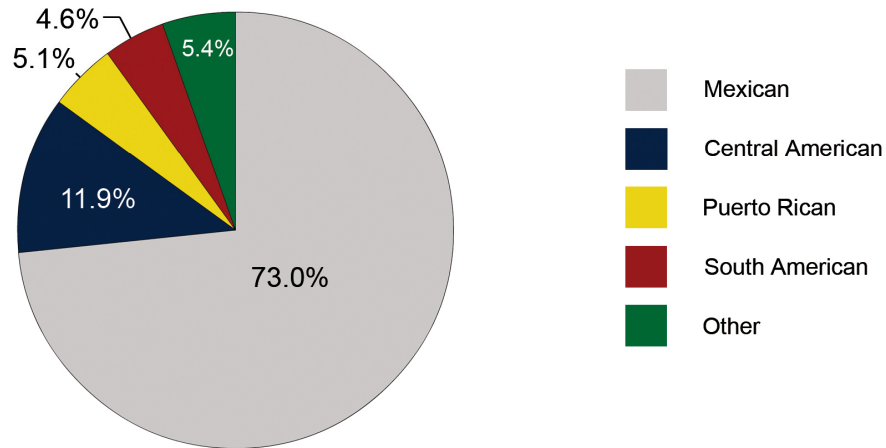
HIV/AIDS Statistics

Figure 25: Cumulative Hispanic AIDS Cases in California - Gender and Age at Diagnosis



- The proportion of United States-born cases is much lower among Central American cases (4.6 percent) than among Mexican cases (31.4 percent; Figure 26). Roughly 92.7 percent of cases of Central American descent were born in their country of descent while 68.1 percent of cases of Mexican descent were born in Mexico.

Figure 26: Cumulative Hispanic AIDS Cases in California - Region of Descent (Among Cases with Specified Region of Descent)



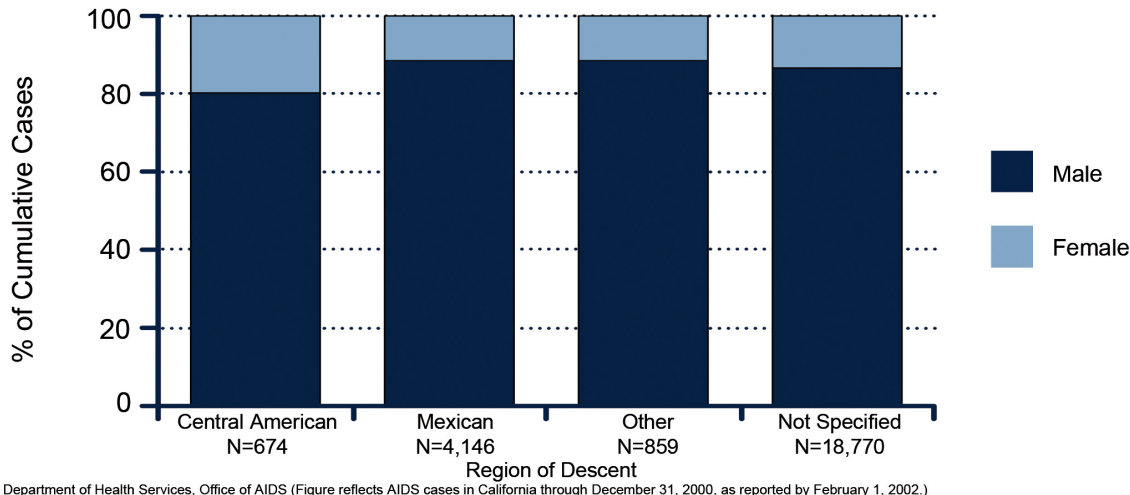
California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

N = 5,679

Note: Region of descent is not specified for 76.8 percent of Hispanic AIDS cases. These cases are not included in the graph.

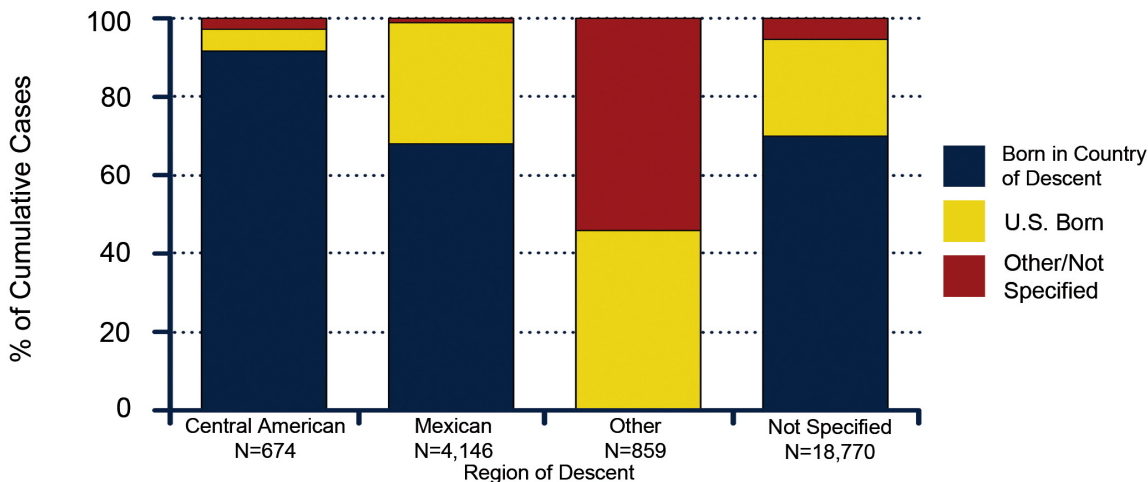
HIV/AIDS Statistics

Figure 27: Cumulative Hispanic AIDS Cases in California - Region of Descent and Gender



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Figure 28: Cumulative Hispanic AIDS Cases in California - Country of Birth and Region of Descent



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

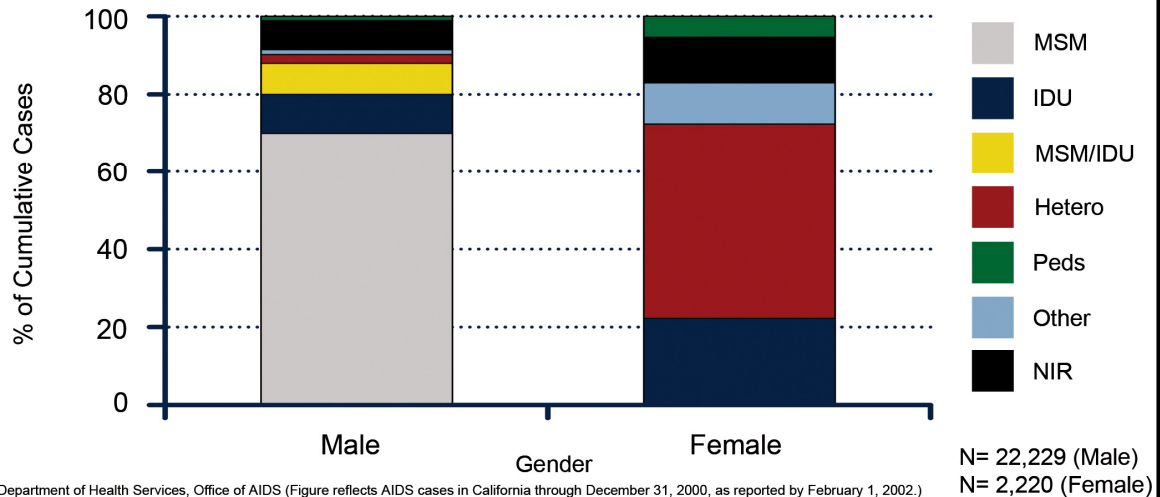
Mode of Exposure

- The mode of exposure among cumulative Hispanic AIDS cases mirrors that of all cumulative AIDS cases in the state, with the vast majority of exposures (64.0 percent) being MSM. Injection drug use was the second most common mode of exposure among Hispanics, accounting for approximately one-tenth (10.6 percent) of all cases (data not shown).
- Among Hispanic male cases, 70.4 percent were exposed through same gender sex. Heterosexual contact accounts for more than half (50.6 percent) of female cases. The percentage of female cases that are exposed through injection drug use is greater than that of male cases (22.5 percent versus 9.4 percent; Figure 29).

HIV/AIDS Statistics

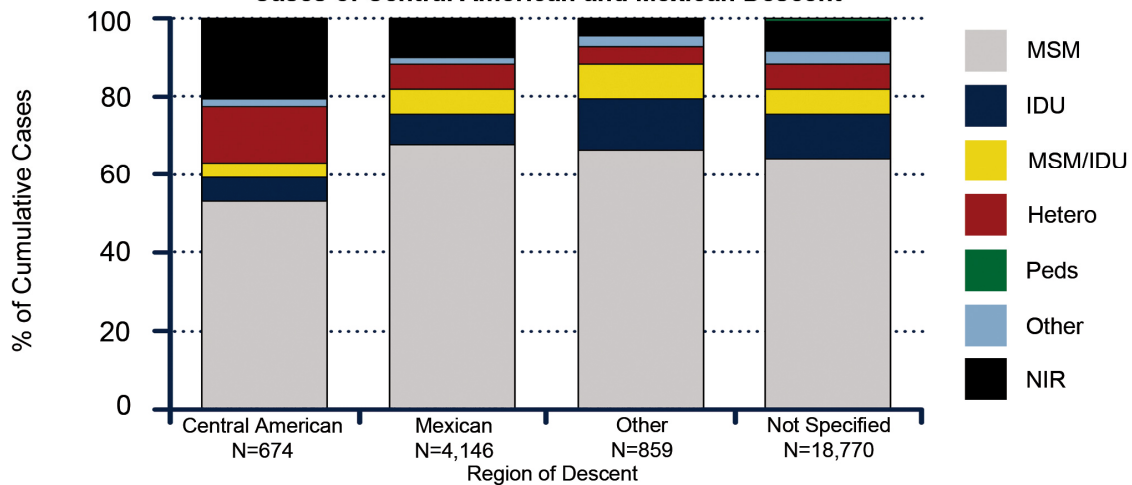
- Exposure to HIV through sexual contact between males is slightly lower among cases of Central American descent (52.7 percent) than among cases of Mexican descent (67.1 percent). Heterosexual exposure, however, is more common among cases of Central American descent (15.1 percent versus 6.7 percent; Figure 30).

Figure 29: Cumulative Hispanic AIDS Cases in California - Mode of Exposure and Gender



*NIR indicates "Non-Identified Risk."

Figure 30: Cumulative Hispanic AIDS Cases in California - Mode of Exposure for Hispanic Cases of Central American and Mexican Descent



*NIR indicates "Non-Identified Risk."

HIV/AIDS Statistics

County of Residence at Diagnosis

- Three-quarters of all Hispanic AIDS cases resided in one of the following four counties at the time of their AIDS diagnosis: Los Angeles (49.1 percent), San Francisco (10.8 percent), San Diego (8.7 percent), and Orange (6.0 percent).
- Since 1980, far more Hispanic AIDS cases have been diagnosed in Los Angeles County than in any other county in California. This region accounts for nearly half (49.1 percent) of all cumulative AIDS cases that are Hispanic (data not shown). These percentages may be influenced by the geographical distribution of the general Hispanic population of California.

Country of Birth

- At least half (50.8 percent) of all Hispanics diagnosed with AIDS in California were born outside the United States. For 7.8 percent of cumulative Hispanic cases, the country of birth is not specified (data not shown).

HIV/AIDS Statistics

Hispanics Living with AIDS*

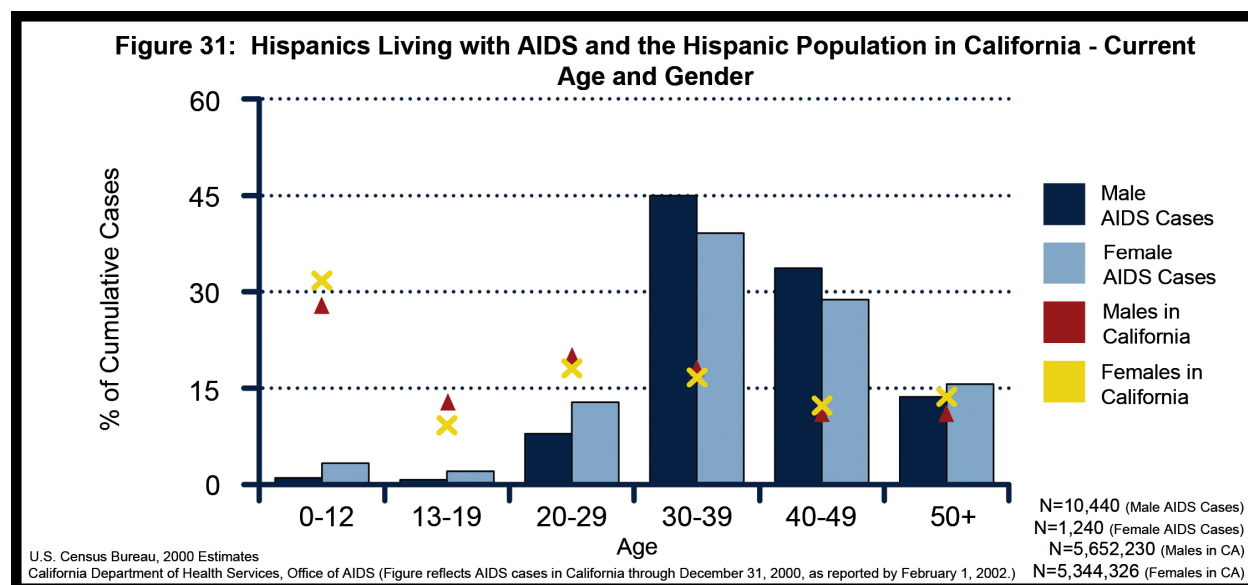
Number of Hispanics Living with AIDS: 11,680 (47.8 percent of all Hispanic AIDS cases; 25.3 percent of all individuals living with AIDS). Total Hispanic population in California in 2000: 10,966,556 (U.S. Census Bureau, 2000 Estimates).

Gender

- Of all Hispanics living with AIDS, 89.4 percent are men and 10.6 percent are women (data not presented). Of the general population of Hispanics in 2000 (according to the 2000 Census), 51.4 percent were men and 48.6 percent were women.

Current Age

- Less than one-tenth (9.2 percent) of Hispanics living with AIDS are less than 30 years of age. As is the case for all racial/ethnic groups, a disproportionately large number of Hispanics living with AIDS are between the ages of 30-49; Hispanics aged 30-49 account for 77.5 percent of Hispanics living with AIDS, but account for only 28.3 percent of the Hispanic population in California; data not shown).
- The age distribution of Hispanics living with AIDS is similar for both men and women. Compared to Hispanic males living with AIDS, a larger proportion of Hispanic women living with AIDS, however, are younger than the age of 30 (16.9 percent compared to 8 percent; Figure 31). The age distribution of California's Hispanic population is similar for both males and females. However, when comparing the age distribution of the Hispanic general population to that of the Hispanic AIDS population, it is clear that Hispanics age 30-49 are disproportionately affected by the AIDS epidemic (Figure 31).

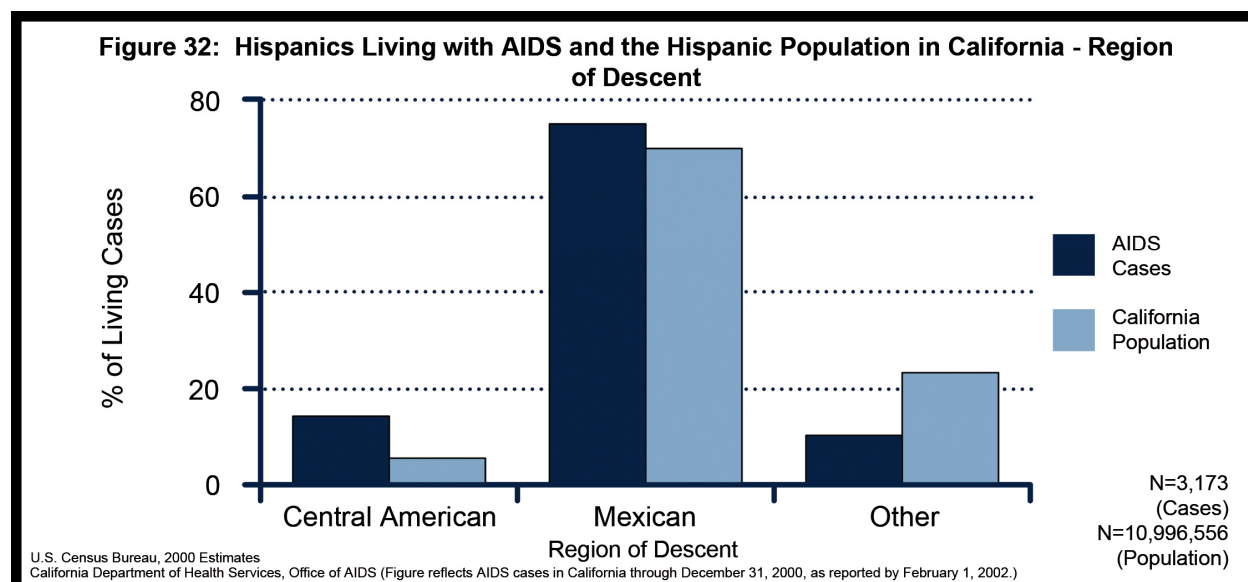


* Presumed living as of December 2000.

HIV/AIDS Statistics

Region of Descent

- Approximately 75.8 percent of Hispanic AIDS cases for whom region of descent is specified are of Mexican descent. This percentage is similar to the percentage of California's Hispanic population represented by individuals of Mexican descent (70.7 percent; Figure 32).



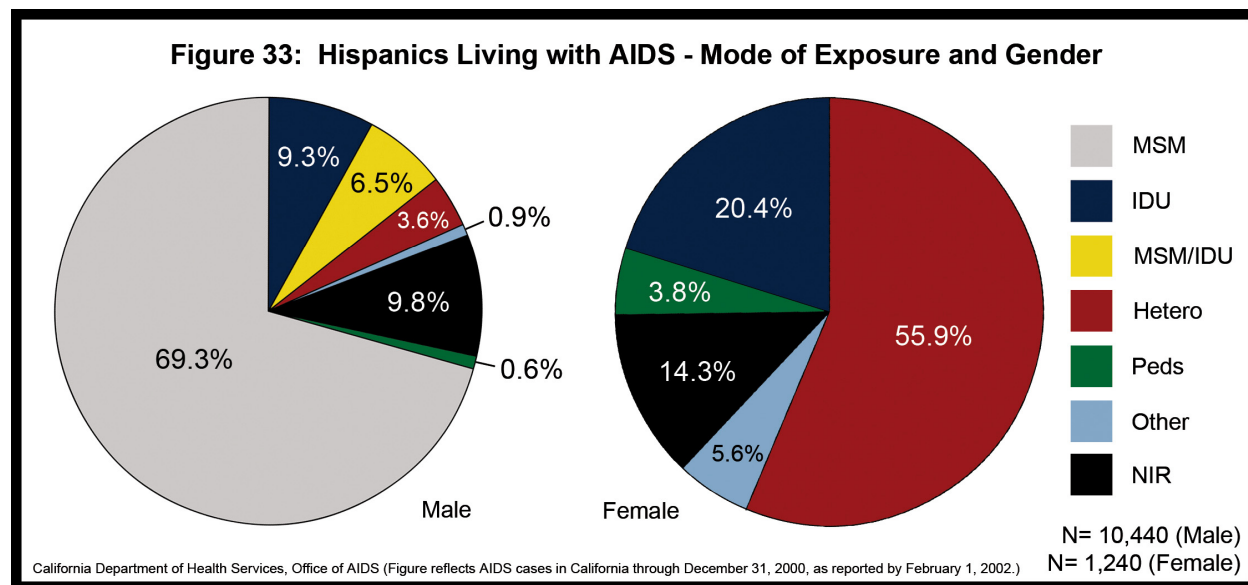
Note: Region of Descent is not specified for 72.8 percent of living Hispanic AIDS cases. These cases are not included in the graph. Region of descent is specified for all Hispanics in the 2000 U.S. Census Bureau. "Other" includes Central America, South America, Caribbean, Spain, and Portugal.

Mode of Exposure

- As seen among all individuals living with AIDS in California, the majority of Hispanics living with AIDS (61.9 percent) was exposed through MSM. Injection drug use and heterosexual contact each account for approximately one-tenth of exposures among Hispanics living with AIDS (9.1 percent and 10.5 percent respectively; data not shown).
- The majority (69.3 percent) of Hispanic males living with AIDS was exposed to HIV through same gender sex and approximately 9.3 percent were exposed through injection drug use. For 9.8 percent of cases, mode of exposure was not determined (Figure 33).
- Roughly ten percent of Hispanic males between 13-19 years of age who are living with AIDS were exposed through same gender sex. This percent increases by more than seven-fold (to 72.6 percent) for individuals 20-29 years of age and remains above 60 percent for all Hispanic males living with AIDS who are now in age groups over 30. Injection drug use accounts for a slightly larger percentage of exposures in Hispanic males over 50 compared to men in younger age groups (data not shown).
- Most Hispanic women living with AIDS (55.9 percent) were exposed through heterosexual contact and over 20 percent were exposed through injection drug use. Risk was not determined for approximately 14.3 percent of cases (Figure 33).

HIV/AIDS Statistics

- Exposure due to heterosexual contact is most prevalent for Hispanic women between 20-29 years of age, making up 65.2 percent of cases in this age group. Exposure due to injection drug use is most prevalent among Hispanic women 40-49 years of age, accounting for 26.6 percent of Hispanics in this age group (data not shown).



*NIR indicates "Non-Identified Risk."

County of Residence at Diagnosis

- Nearly three-fourths (74.3 percent) of all of Hispanics living with AIDS were diagnosed in one of the following four counties: Los Angeles (48.7 percent), San Diego (9.6 percent), Orange (7.3 percent), and San Francisco (8.8 percent; data not shown). Other counties that account for at least 2 percent of Hispanics living with AIDS are Riverside (3.4 percent), San Bernardino (3.1 percent), Santa Clara (3.1 percent), and Alameda (2.2 percent).

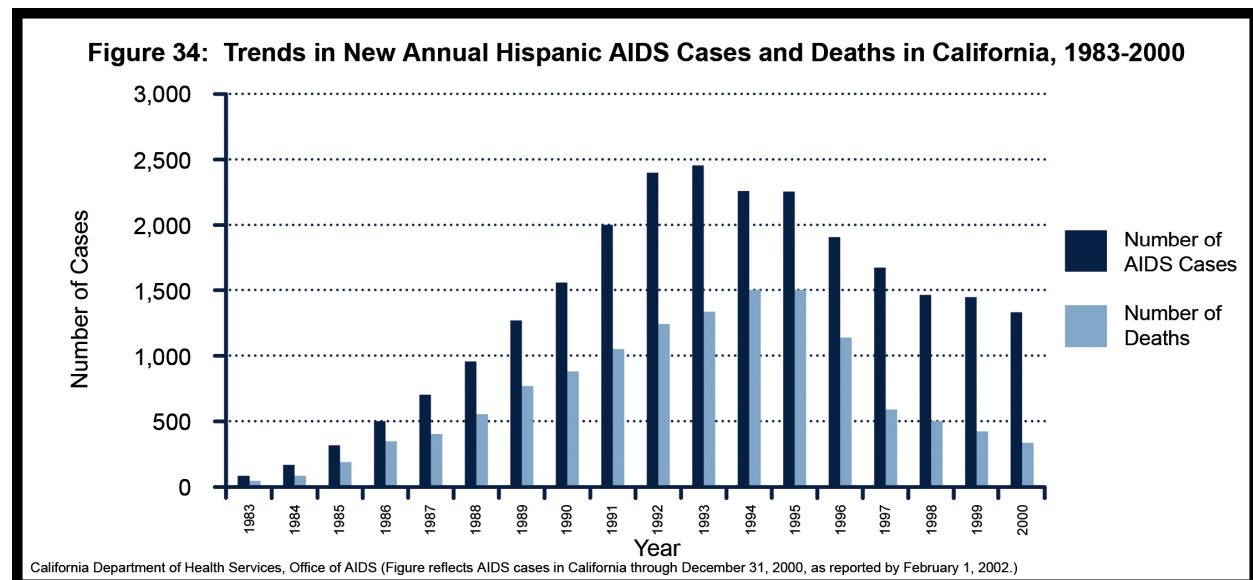
HIV/AIDS Statistics

AIDS Trends Among Hispanics in California

Overall Trends

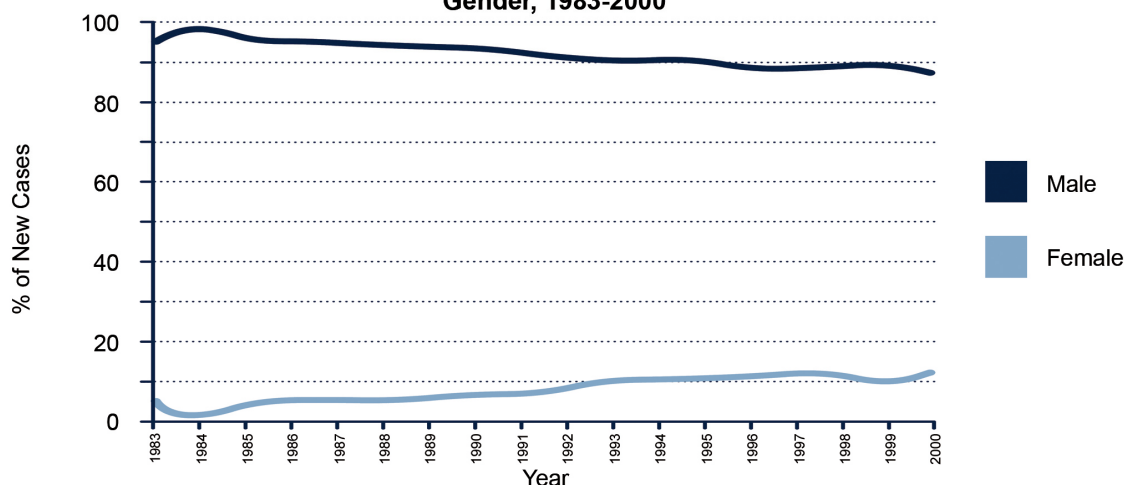
Trends in New Annual AIDS Cases

- The number of new annual AIDS cases among Hispanics in California rose steadily until 1993 (2,440 cases). After 1993, the number of AIDS cases decreased, with 1,311 cases in 2000 (Figure 34). This bell-shaped trend is similar to that seen among all AIDS cases in California, except that the number of AIDS cases in California peaked in 1992.
- The gender distribution of Hispanics newly diagnosed with AIDS has remained relatively stable since 1983 (Figure 35).
- Since 1984, there has been a slight but steady increase in the percentage of new annual cases that are female, from 1.4 percent in 1984 to 13.2 percent in 2000 (Figure 35). This trend is similar to those seen among all AIDS cases in California.



HIV/AIDS Statistics

Figure 35: Trends in Percent of Total New Annual Hispanic AIDS Cases in California by Gender, 1983-2000



Incidence

- AIDS incidence among Hispanics in California steadily increased until 1992, at which time it began to steadily decrease, always remaining under 30 cases/100,000. In 2000, AIDS incidence among Hispanics (12 cases/100,000) was similar to the AIDS incidence in the overall population (11.5 cases/100,000; Figure 20).

Trends in Annual Deaths Among AIDS Cases

- Deaths among Hispanics with AIDS increased steadily until 1995, after which time it began to decrease rapidly (Figure 34). The shift in death trends starting in 1995 may be due in part to the advent of new multi-drug therapies for HIV/AIDS treatment.

Trends by Age at Diagnosis

Trends in New Annual AIDS Cases by Age at Diagnosis

- Hispanics between the ages of 30-39 have consistently represented the greatest number of new annual AIDS cases diagnosed each year, ranging between 42.8 percent to 48.4 percent over the years and accounting for 46 percent of cases in 2000 (data not shown).
- The age distribution of new Hispanic cases has not varied much over the years (data not shown).
- The percentage of newly diagnosed Hispanic cases represented by the 20-29 and 40-49 age groups has remained relatively equal. By the close of 2000, these groups, respectively, accounted for 17.3 percent and 23.3 percent of all new annual Hispanic AIDS cases (data not shown).

HIV/AIDS Statistics

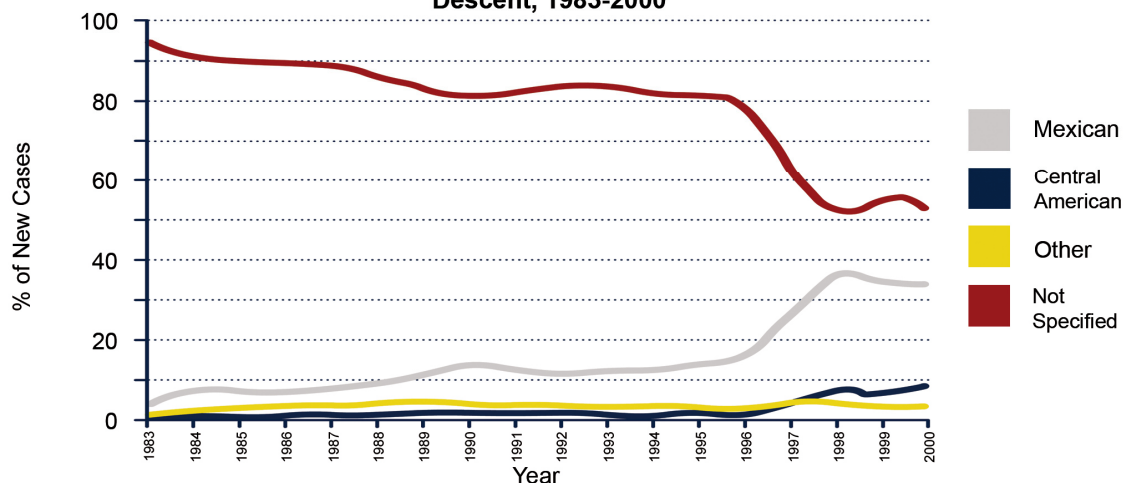
- In 2000, Hispanics over age 50 accounted for 12.2 percent of new Hispanic AIDS cases. Hispanic cases under the age of 13 and those 13-19 years of age each accounted for less than 1 percent of new AIDS cases that year (data not shown).
- AIDS incidence by age group was not calculated. The age distribution of Californian Hispanics has remained relatively constant over the years. As a result, the crude trends in AIDS cases are not as much a function of a population's changing age distribution as they are of actual changes in AIDS case distribution by age group.

Trends by Region of Descent

Trends in New Annual AIDS Cases by Region of Descent

- The percentage of newly diagnosed Hispanic cases that have been of Mexican descent increased between 1983 (4.6 percent) and 1998 (36.2 percent), and since then has remained relatively steady at around 35 percent (Figure 36). This trend closely mirrors the trend in percent of Hispanic cases for which region of descent is not specified, and may thus imply that the increase in percentage of cases of Mexican descent may be a function of increased surveillance and better reporting of cases for this population (Figure 36).
- Since 1998, the percentage of newly diagnosed Hispanic cases for which region of descent is not specified, has remained between 50 and 55 percent (Figure 36).
- Hispanics of Mexican descent have consistently represented the majority of new Hispanic AIDS cases for whom the region of descent is specified (data not shown).
- Beginning in 1996, the number of new annual Hispanic AIDS cases that were either of Mexican or Central American descent began to increase, reaching 455 and 113 cases in 2000, respectively (data not shown).
- Cases of other specified regions of descent have consistently numbered under 100 throughout the years (data not shown).

Figure 36: Trends in Percent of Total New Annual Hispanic AIDS Cases in California by Region of Descent, 1983-2000



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

HIV/AIDS Statistics

Incidence by Region of Descent

- Lack of annual intercensal estimates for region of descent for Hispanics in California precludes determination of AIDS incidence by region of descent for Hispanics.
- Table 5 compares the percentage of newly diagnosed Hispanic cases in 2000 by region of descent to the percent distribution of descent for California's Hispanic population that same year.

Table 5: New Hispanic AIDS Cases and California's Hispanic Population by Region of Descent, 2000

Region of Descent	Percent of AIDS Cases in 2000	Percent of Hispanic Population in 2000
Mexican	21.0	77.1
Central American	3.8	5.3
Other	2.5	5.2
Not Specified	72.7	12.4

U.S. Census Bureau, 2000 estimates.

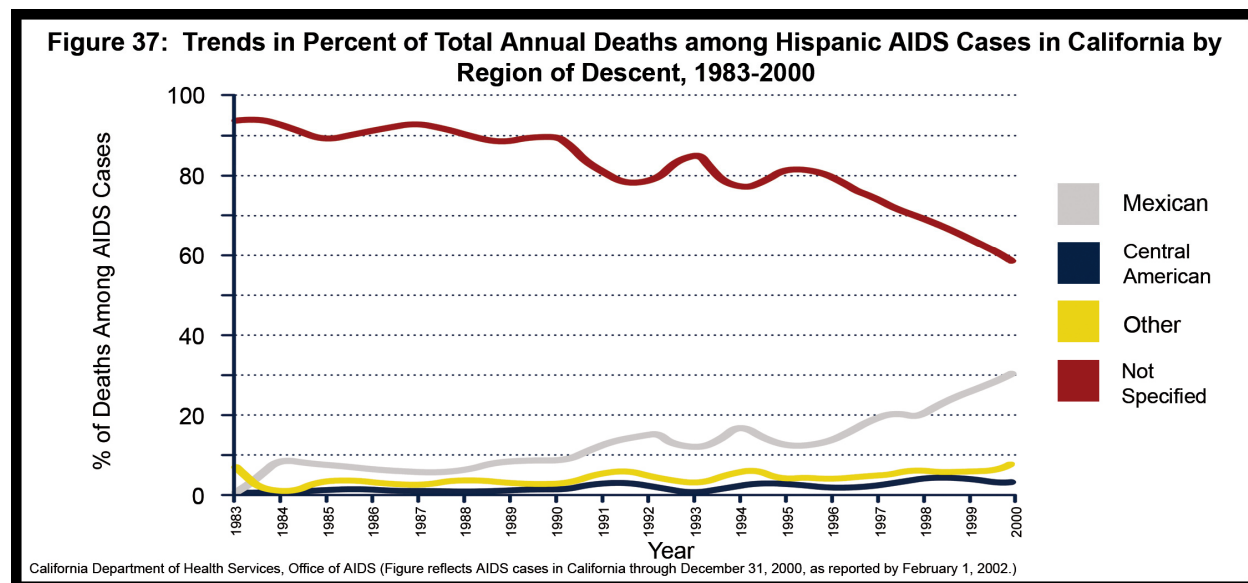
California Department of Health Services, Office of AIDS (Table reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Trends in Annual Deaths Among AIDS Cases by Region of Descent

- The majority of deaths among Hispanic AIDS cases has consistently occurred among Hispanics whose region of descent is not specified. Death among these Hispanic AIDS cases rose steadily since 1983, reaching its peak in 1995 at 1,205, and has since been decreasing (data not shown). This trend follows that seen for all Hispanic AIDS cases in California.
- Death trends are similar across region of descent for Hispanic cases living with AIDS. Deaths among Hispanic AIDS cases of specified region of descent have decreased more steadily compared to deaths among those cases for whom region of descent is not specified (data not shown).
- Since 1995, the percentage of deaths among Hispanic AIDS cases represented by Hispanics whose subethnicity is unknown has been decreasing (Figure 37). This may be a function of better AIDS surveillance of the Hispanic population as well as better reporting of region of descent for Hispanic AIDS cases.
- While the percentage of deaths represented by Hispanics of Mexican descent has been increasing since 1995, from 12.4 percent that year to 30.6 percent in 2000, representation by Hispanics of Central American descent and other subgroups has remained relatively constant (Figure 37).

HIV/AIDS Statistics

- The increase in percentage of deaths represented by Hispanics of Mexican descent may be a function of the decrease in deaths of Hispanic cases whose region of descent is unknown. Once "Region of Descent" is more consistently collected, trends in deaths of AIDS cases of Mexican descent will more accurately depict the actual trends of that specific group.



Trends by Mode of Exposure

Trends in New Annual AIDS Cases by Mode of Exposure

Among All Hispanics (data not shown)

- Mode of exposure for Hispanic AIDS cases resembles that seen among Californian AIDS cases. MSM have consistently accounted for the majority of new cases.
- The percentage of Hispanic cases with MSM exposures has decreased over the years from 70.8 percent in 1990 to 53.7 percent in 2000.
- Meanwhile, the percentage of NIR cases has increased since 1994 from 6 percent to 18.5 percent in 2000.
- In 2000, injection drug use, MSM/IDU, heterosexual contact, and pediatric exposure accounted for 11.2 percent, 3.8 percent, 10.9 percent, and 0.7 percent, respectively.

Among Males

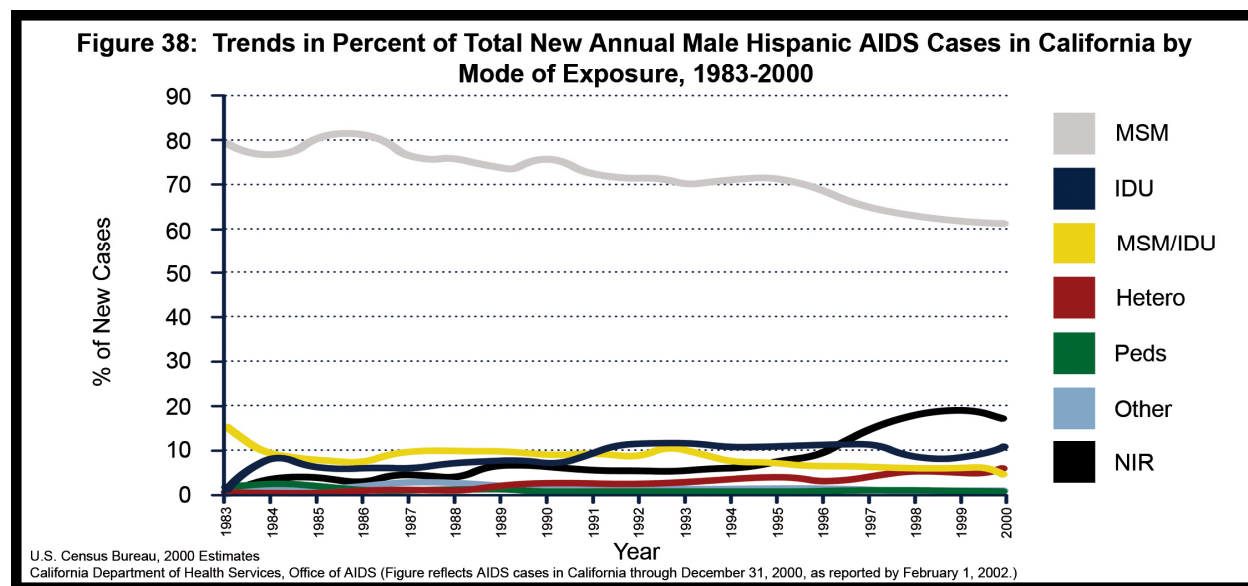
- MSM exposure has accounted for the majority of Hispanic AIDS cases. Over the years, however, the percentage of male cases attributable to MSM has been decreasing, accounting for 75.9 percent of cases in 1990, 71.5 percent in 1994, and 61.9 percent in 2000 (Figure 38).

HIV/AIDS Statistics

- Interestingly, the percentage of Hispanic male cases with NIR has been increasing since 1994 when it accounted for six percent of cases. In 2000, NIR cases accounted for 16.9 percent of new cases (Figure 38). The percent increase in NIR (10.9 percent) within this timeframe is similar to the percent decrease in MSM exposure.
- A slight increase in the percentage of heterosexual cases is seen between 1996 and 2000 (2.9 percent and 5 percent, respectively; Figure 38).
- In 2000, exposure through injection drug use accounted for 10.3 percent of new Hispanic cases.
- Modes of exposure for all Californian and Hispanic male cases in 2000 are similar except for MSM/IDU and NIR. Of Hispanic males diagnosed with AIDS in 2000, 4.4 percent reported MSM/IDU as the mode of exposure, compared to 7.7 percent of all males diagnosed in California that year. The percentage of new Hispanic male AIDS cases for whom risk was not identified was 16.9, compared to 10.9 percent of all males diagnosed in California that year (Figure 23 and Figure 38).

Among Females (Data are not shown due to insufficient numbers of cases per year)

- Heterosexual contact has been the most common mode of exposure among Hispanic female AIDS cases, ranging from 0 to 60.2 percent of new Hispanic female cases and accounting for 49.7 percent of new cases in 2000.
- NIR has emerged as the second largest mode of exposure category for this group. In 2000, mode of exposure was not identified for 29.5 percent of newly diagnosed female Hispanic cases in the state (in contrast to 22.5 percent of all of California's newly diagnosed female cases that year).
- In 2000, 17.3 percent of new Hispanic female cases were attributed to injection drug use, pediatric exposure accounted for 1.2 percent, while 2.3 percent were exposed to HIV through other means.



*NIR indicates "Non-Identified Risk."

**AIDS AMONG HISPANICS OF MEXICAN
DESCENT IN CALIFORNIA**

HIV/AIDS Statistics

AIDS AMONG HISPANICS OF MEXICAN DESCENT IN CALIFORNIA

Cumulative AIDS Cases of Mexican Descent

From March 1978 to December 31, 2000:

(Note: The first case of Mexican descent was diagnosed in August 1983.)

- Cumulative AIDS cases of Mexican descent: 4,146 (17 percent of all Hispanic AIDS cases, 73 percent of Hispanic cases for whom region of descent is specified).
- Number of deaths among AIDS cases of Mexican descent: 1,740 (42 percent of cumulative AIDS cases of Mexican descent; 13.6 percent of all deaths among Hispanic AIDS cases; 69.4 percent of all deaths among Hispanic AIDS cases for whom expanded ethnicity is specified).
- Individuals of Mexican descent with AIDS presumed living: 2,406 (58 percent of cumulative AIDS cases of Mexican descent; 20.6 percent of all Hispanics with AIDS presumed living; 75.8 percent of all presumed living Hispanic AIDS cases of Mexican descent for whom expanded ethnicity is specified).

Country of Birth

- Less than a third of all reported Mexican AIDS cases in California were born in the United States (31.4 percent).

Table 6: Cumulative AIDS Cases by Living Status and Country of Birth

Country of Birth	Cumulative Number of Cases	Living Status	
		Living*	Deceased
U.S.	1,301	509 (39.2%)	792 (60.9%)
Mexico	2,823	1882 (66.7%)	941 (33.3%)
Other	13	9 (69.2%)	4 (30.8%)
Not Specified	9	6 (66.7%)	3 (33.3%)

*Presumed living as of December 2001.

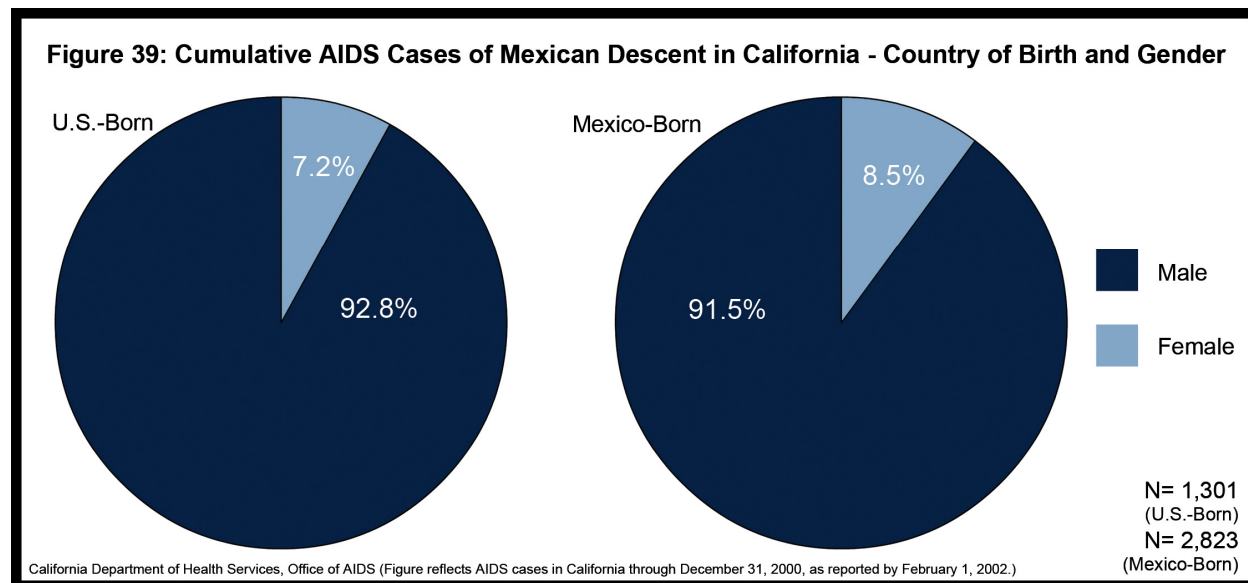
California Department of Health Services, Office of AIDS (Table reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

- The data for the following sections are stratified by United States-born and Mexico-born. The percentage of AIDS cases of Mexican descent born in other countries is very small (0.5 percent) and thus is not included in the analysis.

HIV/AIDS Statistics

Gender

- As in all Californian AIDS cases and all Hispanic AIDS cases, the majority of cases of Mexican descent are male. Men make up more than 90 percent of these cases, 93 percent among United States-born and 91.5 percent among Mexico-born (Figure 39).



Age at Diagnosis

- The distributions of diagnosis age for AIDS cases are similar overall for both individuals of Mexican descent born in the United States and those born in Mexico (data not shown).
- Similar to all California and all Hispanic AIDS cases, most cases of Mexican descent were between 30-39 years of age when they were diagnosed with AIDS. Approximately 49.4 percent of United States-born and 46.6 percent of Mexico-born cases were in this age group at the time of diagnosis (data not shown).
- The majority of both male and female AIDS cases of Mexican descent were diagnosed between 30-39 years of age (Figures 40 and 41).
- A slightly greater percentage of cases of Mexican descent born in the United States are represented by cases diagnosed at younger than 13 years of age as compared to AIDS cases of Mexican descent born in Mexico (1.6 percent versus 0.3 percent, respectively; data not shown).
- Among female AIDS cases of Mexican descent, the distribution of age at diagnosis varies by country of origin (Figure 41).

HIV/AIDS Statistics

Figure 40: Cumulative AIDS Cases of Mexican Descent in California - Country of Birth and Age at Diagnosis for Males

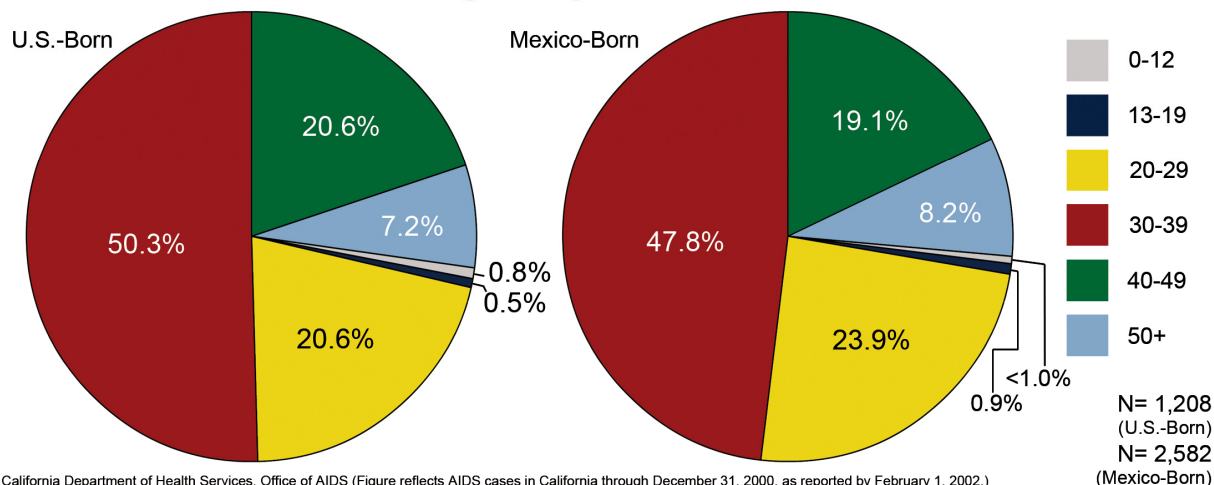
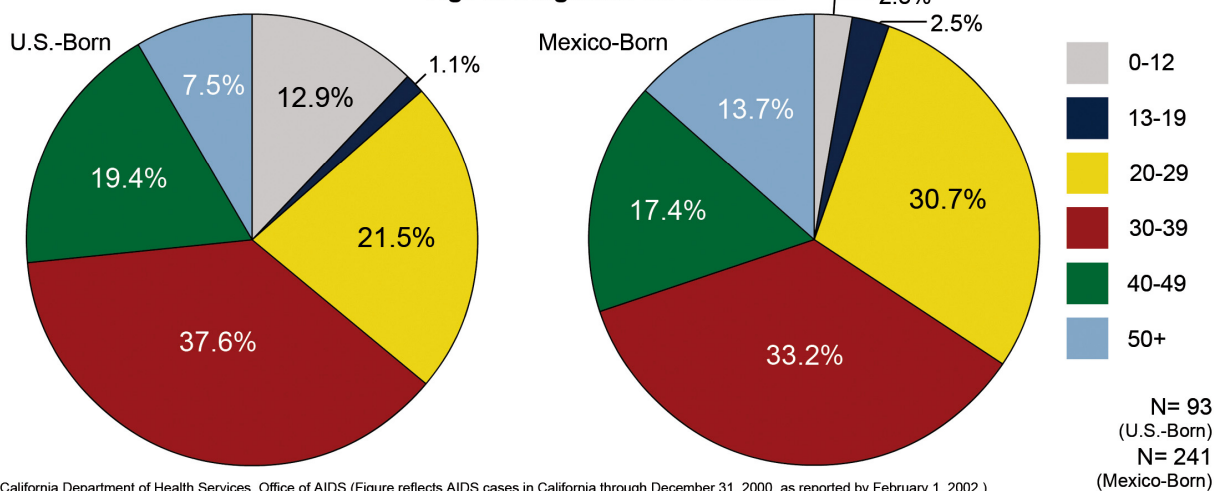


Figure 41: Cumulative AIDS Cases of Mexican Descent in California - Country of Birth and Age at Diagnosis for Females

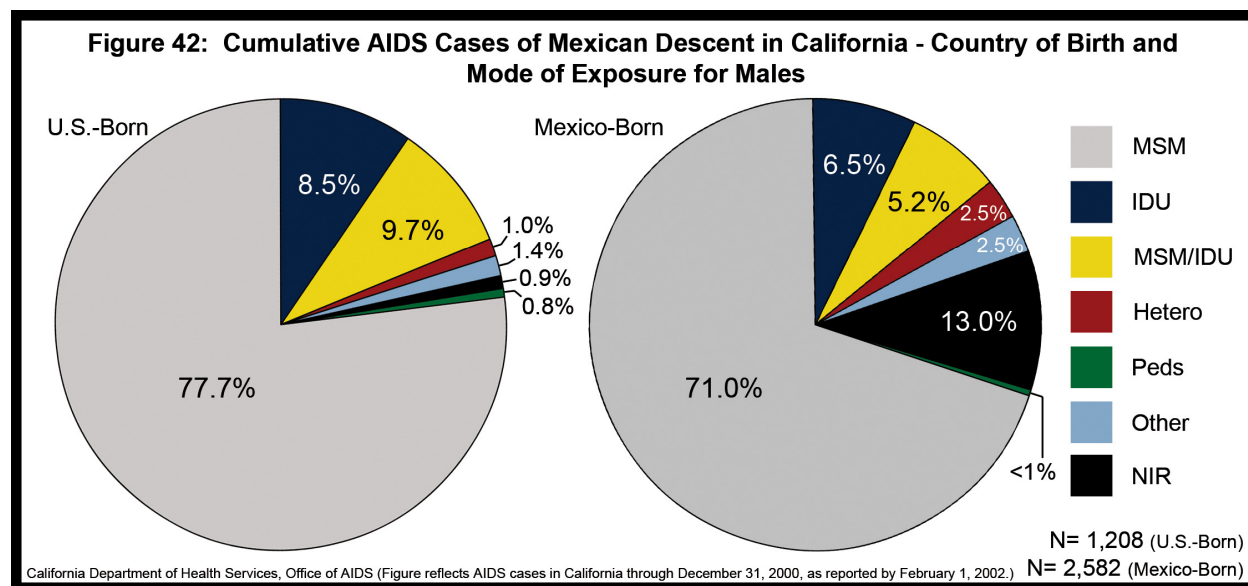


Mode of Exposure

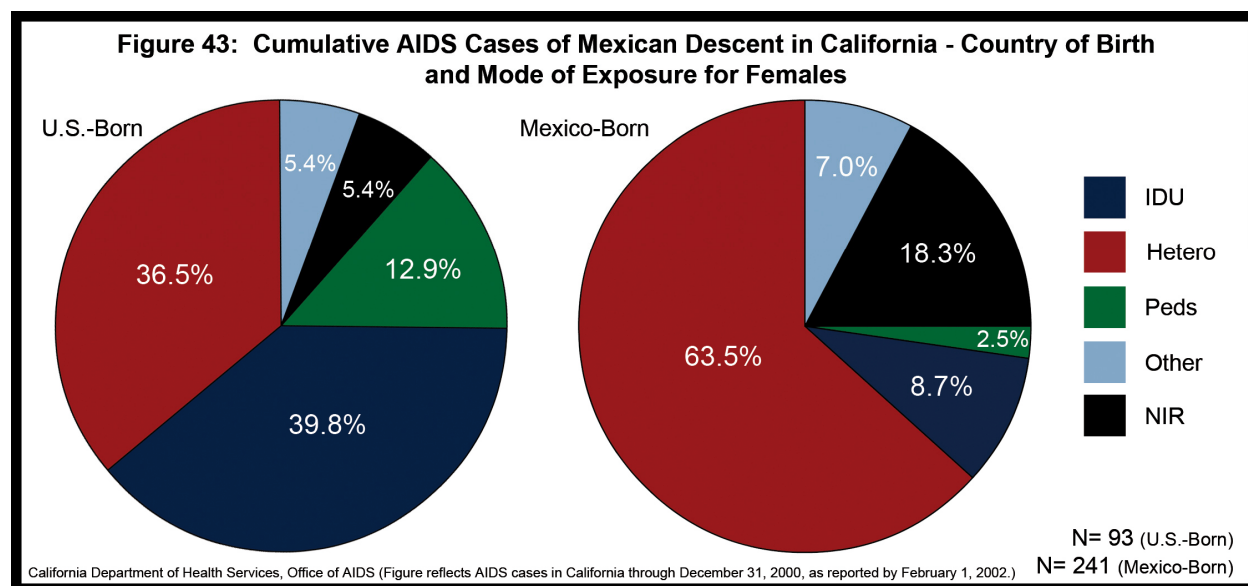
- Among male AIDS cases of Mexican descent, the most common mode of exposure to HIV is MSM, which accounts for 77.7 percent of cases among males born in the United States and 71 percent of cases among males born in Mexico (Figure 42).
- A striking difference is seen in percent of NIR cases by country of origin. A greater percentage of male cases of Mexican descent born in Mexico (13 percent) report NIR for exposure to HIV compared to male cases born in the United States (0.9 percent). MSM/IDU exposure accounts for 9.7 percent of cases born in the United States compared to 5.2 percent of those born in Mexico (Figure 42).

HIV/AIDS Statistics

- Among female AIDS cases of Mexican descent, modes of exposure appear to vary by country of origin. For those born in the United States, the most common mode of exposure is injection drug use (39.8 percent) while heterosexual contact accounts for 36.5 percent of cases. For those born in Mexico, the most common mode of exposure is heterosexual contact (63.5 percent of AIDS cases), while injection drug use accounts for 8.7 percent of cases.
- A greater percentage of female cases of Mexican descent born in the United States are pediatric cases (12.9 percent) compared to the female cases born in Mexico (2.5 percent). A greater percentage of female cases born in Mexico compared to those born in the United States do not have identified modes of exposure (18.3 percent compared to 5.4 percent; Figure 43).



*NIR indicates "Non-Identified Risk."

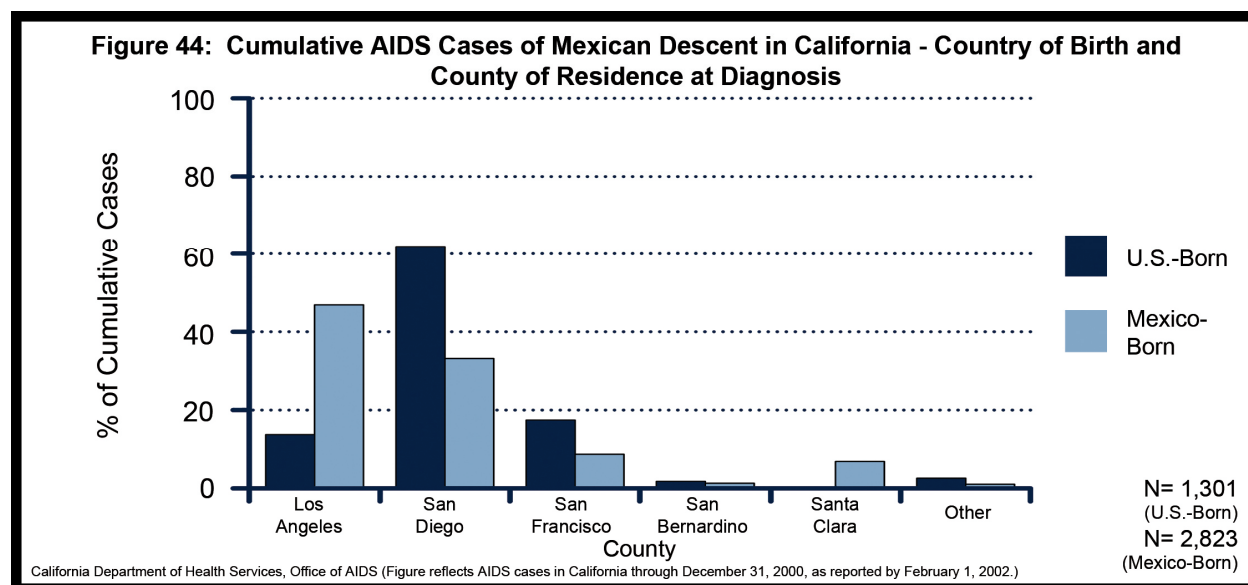


*NIR indicates "Non-Identified Risk."

HIV/AIDS Statistics

County of Residence at Diagnosis

- As seen with all cumulative AIDS cases, most cases of Mexican descent were living in one of three counties in California at the time of diagnosis: Los Angeles, San Francisco, and San Diego (Figure 44). The majority of AIDS cases of Mexican descent born in the United States were living in San Diego County (61.9 percent), while the majority of those born in Mexico lived in Los Angeles County (46.9 percent) when diagnosed.



Note: These percentages may be a function of the geographical distribution of the general Hispanic population in California.

HIV/AIDS Statistics

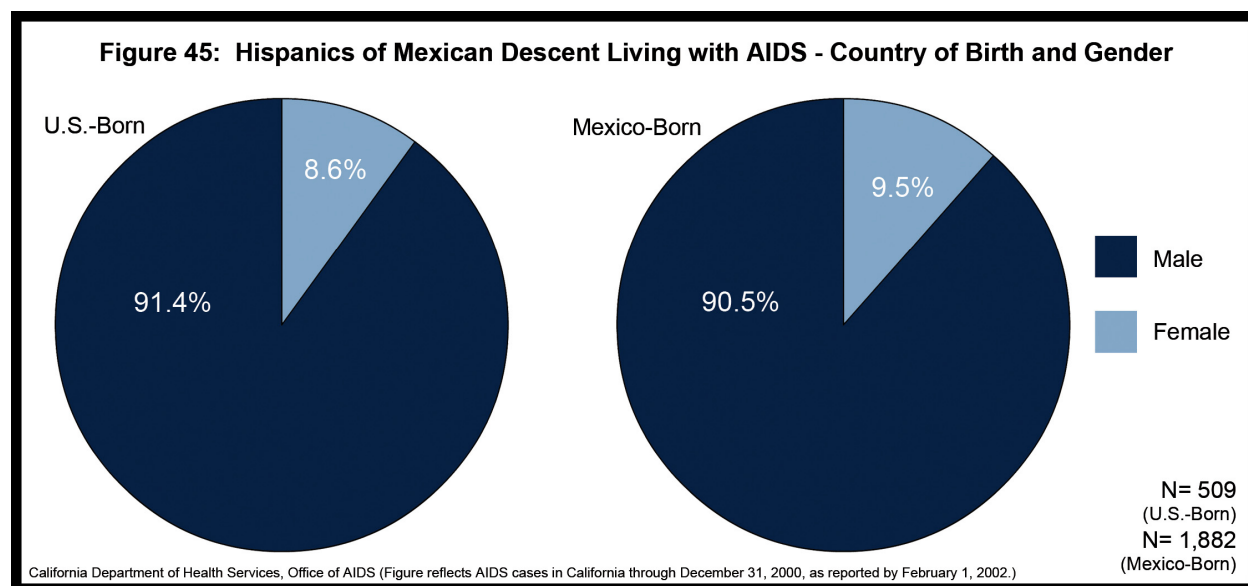
Hispanics of Mexican Descent Living with AIDS*

Number of Hispanics of Mexican descent living with AIDS: 2,406 (58 percent of cumulative AIDS cases of Mexican descent; 20.6 percent of all Hispanics living with AIDS; 75.8 percent all living Hispanic AIDS cases of Mexican descent for whom expanded ethnicity is specified).

Note: U.S. Census Bureau data is not presented due to a lack of detailed information on individuals of Mexican descent (such as place of birth).

Gender

- As with all California and Hispanic living AIDS cases, the majority of individuals of Mexican descent living with AIDS are male. Men make up 91.4 percent of United States-born Hispanics of Mexican descent living with AIDS and 90.5 percent of Mexico-born Hispanics of Mexican descent living with AIDS (Figure 45).



Current Age

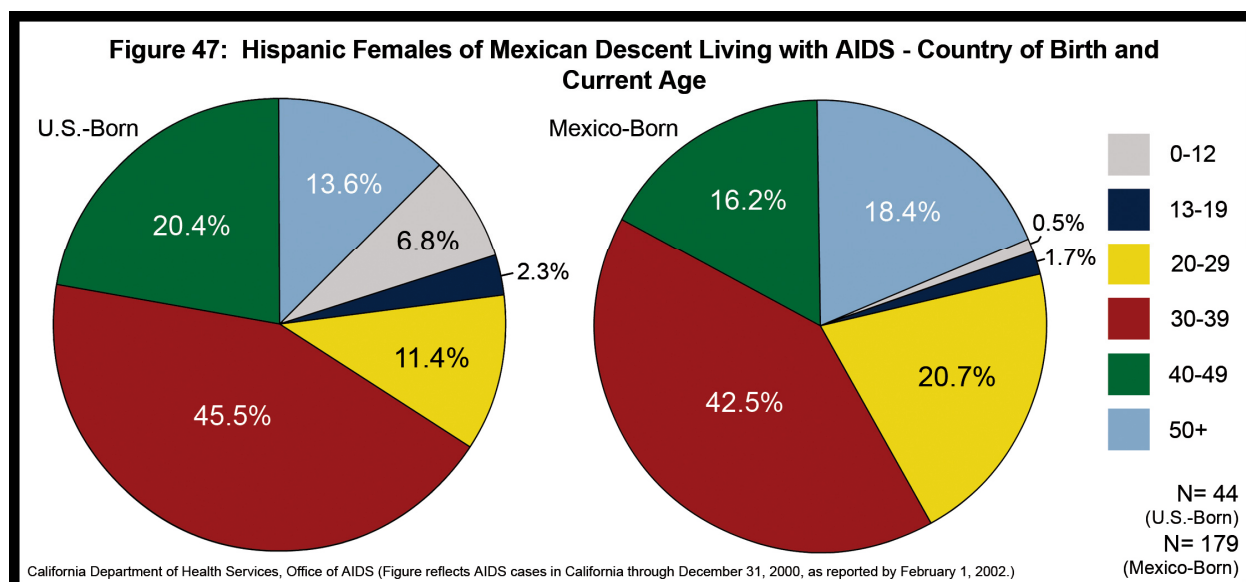
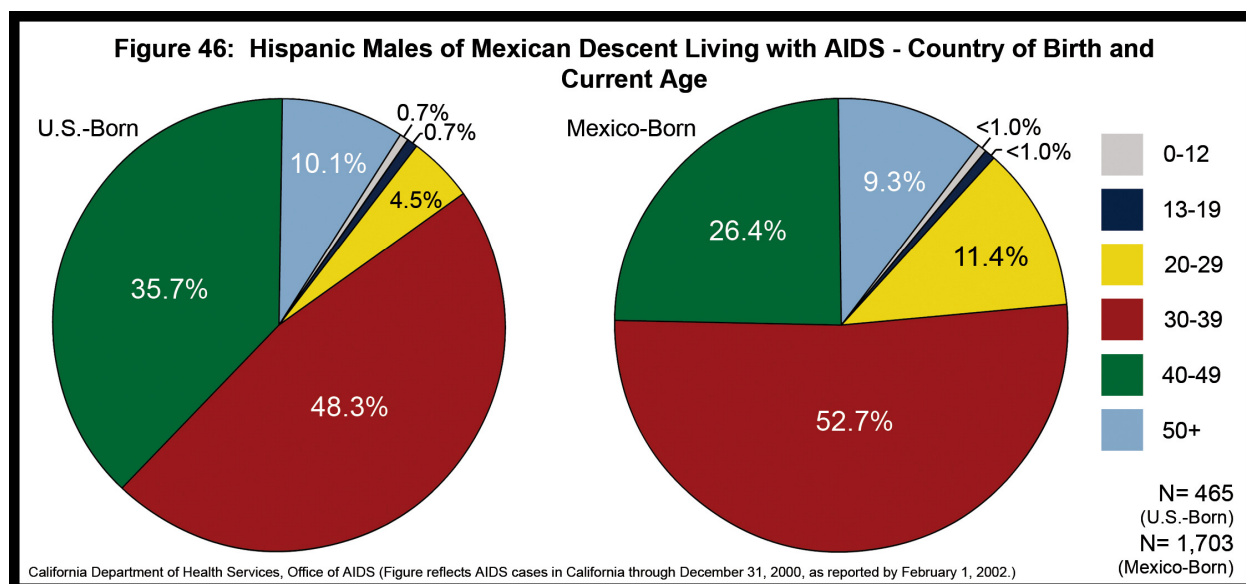
- The majority of individuals of Mexican descent living with AIDS are between 30-49 years old. This is seen across country of origin: 82.5 percent of United States-born and 77.2 percent of Mexico-born Hispanics with AIDS (data not shown) and for both male and female cases (Figures 46 and 47).
- The age distribution of individuals of Mexican descent living with AIDS varies by country of origin. Compared to those born in Mexico, a greater percentage of individuals of Mexican descent born in the United States and living with AIDS are between 40-49 years of age (34.4 percent versus 25.4 percent, respectively). Conversely, 20-29 year olds

* Presumed living as of December 2000.

HIV/AIDS Statistics

constitute a greater percentage of cases born in Mexico than of those born in the United States (12.3 percent versus 5.1 percent, respectively; data not shown).

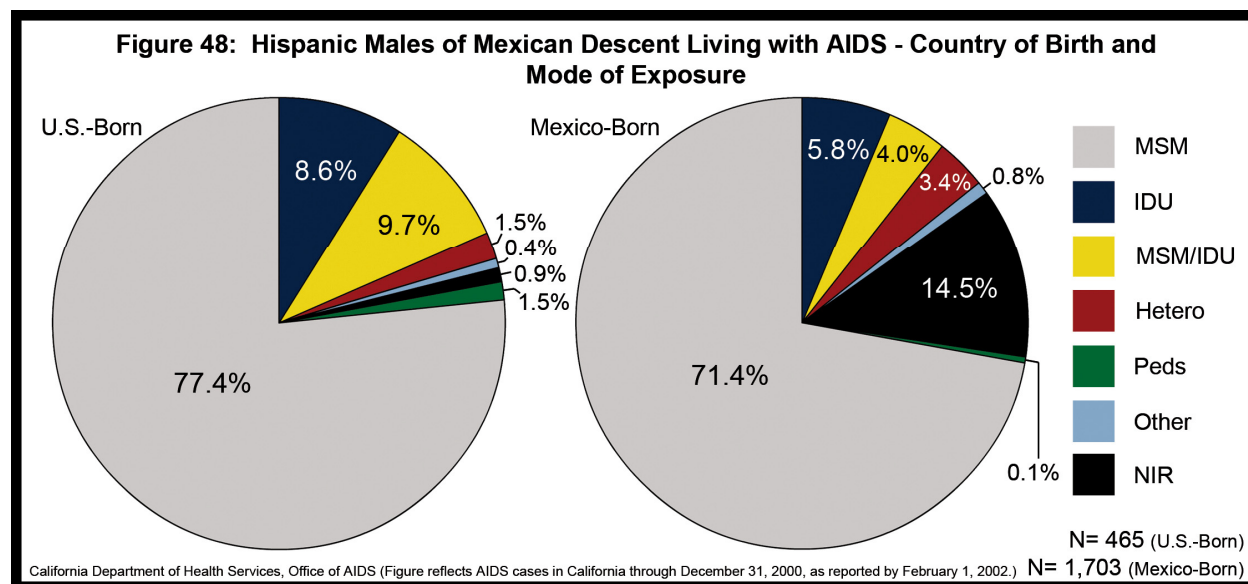
- A greater percentage of those living with AIDS and born in the United States are older than those born in Mexico. Approximately 4.5 percent of males born in the United States and living with AIDS are between 20-29 years of age compared to 11.4 percent of those born in Mexico. Conversely, 35.7 percent of males of Mexican descent born in the United States and living with AIDS are between 40-49 years of age compared to 26.4 percent of those of Mexican descent born in Mexico (Figure 46).
- Age also varies to a certain degree among Hispanic females of Mexican descent living with AIDS. Whereas cases between 20-29 years of age represent a greater percentage of cases born in the Mexico than in the United States (20.7 percent versus 11.4 percent), a greater percentage of those born in the United States are under the age of 13 compared to those born in Mexico (6.8 percent versus 0.5 percent; Figure 47).



HIV/AIDS Statistics

Mode of Exposure

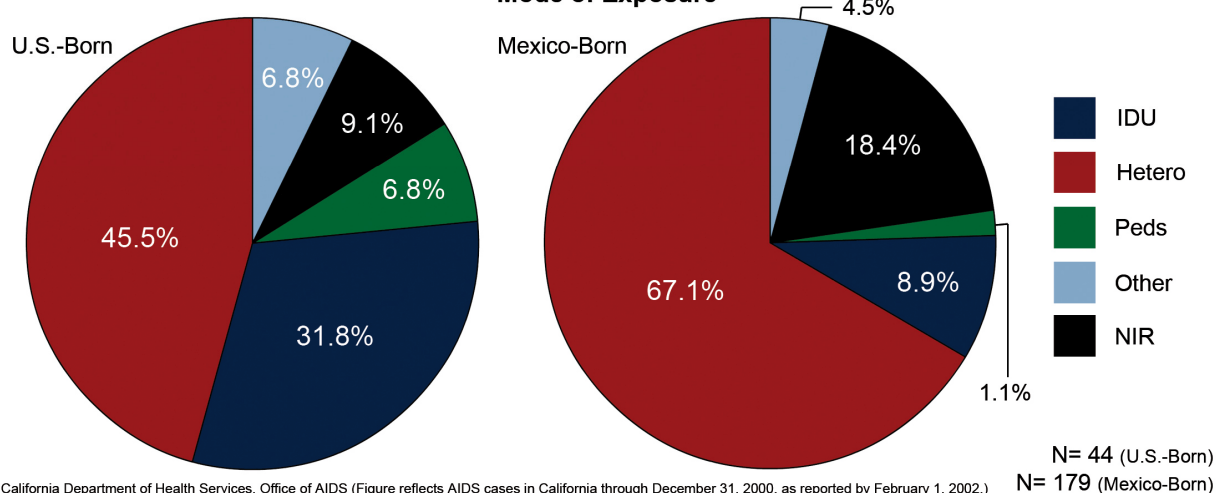
- Among males of Mexican descent living with AIDS, the most common mode of exposure to HIV is MSM. This accounts for 77.4 percent of living AIDS cases born in the United States and 71.4 percent of living cases born in Mexico (Figure 48).
- Although, generally, mode of exposure among living male cases of Mexican descent is similar across country of birth, there are some differences noted. NIR is more common among males of Mexican descent born in Mexico compared to those born in the United States (14.5 percent versus 0.9 percent). Roughly 9.7 percent of males of Mexican descent born in the United States and living with AIDS were exposed through MSM/IDU compared to 4.0 percent of those born in Mexico (Figure 48).
- Among females of Mexican descent living with AIDS, heterosexual contact is the most common mode of exposure to HIV. This is the case across country of birth, although it does account for a greater percentage of cases born in Mexico compared to those born in the United States (67.1 percent compared to 45.5 percent; Figure 49).
- Among females of Mexican descent living with AIDS, exposure through injection drug use and NIR also vary by country of birth. Injection drug use accounts for 31.8 percent of female cases of Mexican descent born in the United States and 8.9 percent of those born in Mexico. As seen among female cases of Mexican descent, NIR is more common among those born in Mexico compared to those born in the United States (18.4 percent versus 9.1 percent; Figure 49).



*NIR indicates "Non-Identified Risk."

HIV/AIDS Statistics

Figure 49: Hispanic Females of Mexican Descent Living with AIDS - Country of Birth and Mode of Exposure

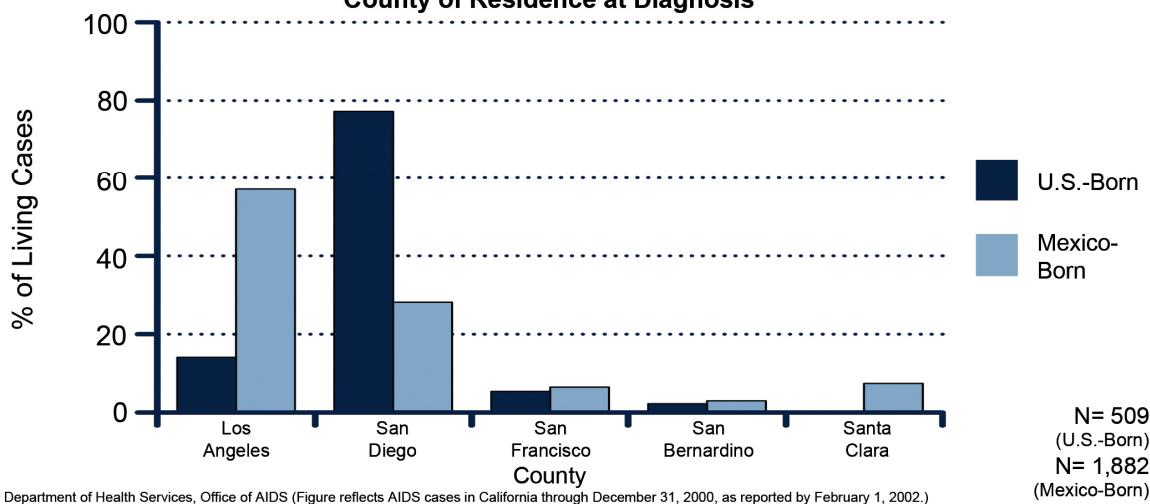


*NIR indicates "Non-Identified Risk."

County Residence at Diagnosis

- The majority of individuals of Mexican descent born in the United States and living with AIDS resided in San Diego County at the time of their AIDS diagnosis (76 percent), while the majority of those born in Mexico resided in Los Angeles County (56 percent). As seen among all Hispanic AIDS cases living with AIDS, most cases of Mexican descent resided in one of three counties at the time of their AIDS diagnosis: Los Angeles, San Francisco, and San Diego (Figure 50).

Figure 50: Hispanics of Mexican Descent Living with AIDS - Country of Origin and County of Residence at Diagnosis



Note: The distribution may to some degree reflect the geographical distribution of individuals of Mexican descent in California, both of those born in Mexico and of those born in the United States, during the particular year of diagnosis.

HIV/AIDS Statistics

AIDS Trends Among Hispanics of Mexican Descent

Note: Although the first AIDS case of Mexican descent was diagnosed in 1983, information on Mexican subgroup is extremely scarce prior to 1987. Trends data are presented beginning in 1987.

Overall Trends

Trends in New Annual AIDS Cases

- The number of new annual AIDS cases of Mexican descent in California rose at varying rates peaking at 527 in 1998. Since then, the number of cases has been decreasing steadily, reaching 455 in 2000 (Figure 51). A decrease in cases has been noted among Californians overall and among Hispanics over time as well, but the peak years vary, particularly for cases of Mexican descent.
- There is an abrupt increase in new AIDS cases of Mexican descent between 1996 and 1997 (Figure 51). This may be a function of the sharp increase in specifying region of descent. Data before 1997 show a peak in 1995, closer to the year in which the greatest number of Hispanics with AIDS was reported (1993).
- The gender distribution of AIDS cases of Mexican descent has remained relatively similar since 1987, with males representing the majority of cases. Since 1987, there has been a relatively steady decrease in the percentage of new annual cases that are male, from 95.8 percent 1987 to 87.9 percent in 2000 (data not shown).

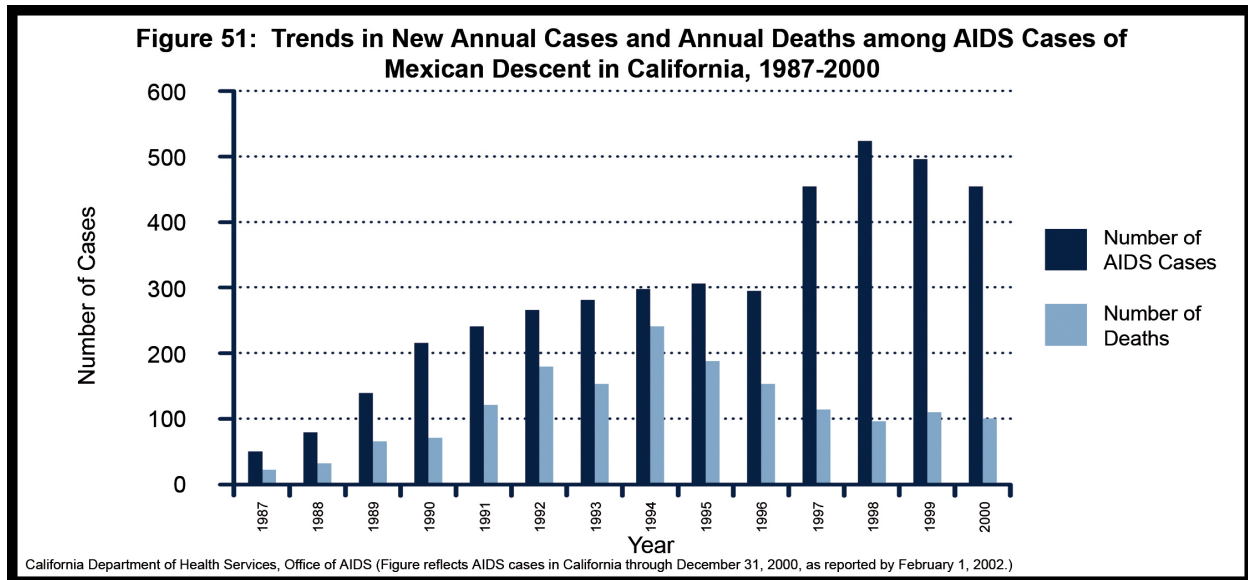
Incidence

- Data on annual incidence by country of origin for cases of Mexican descent is not included because census data on country of origin is not available.

Trends in Annual Deaths Among AIDS Cases

- The number of deaths among AIDS cases of Mexican descent increased steadily until 1995, after which time it began to decrease rapidly, reaching 100 deaths in 2000 (Figure 51). This is similar to what was seen among all of California's AIDS cases as well as all Hispanic AIDS cases.
- The trends in annual deaths more closely resemble those seen in California and among all Hispanic cases more so than the trends in new cases. This may be because, unlike the HARS system reporting, reporting of region of descent for Hispanic cases for vital records may not have undergone changes.

HIV/AIDS Statistics



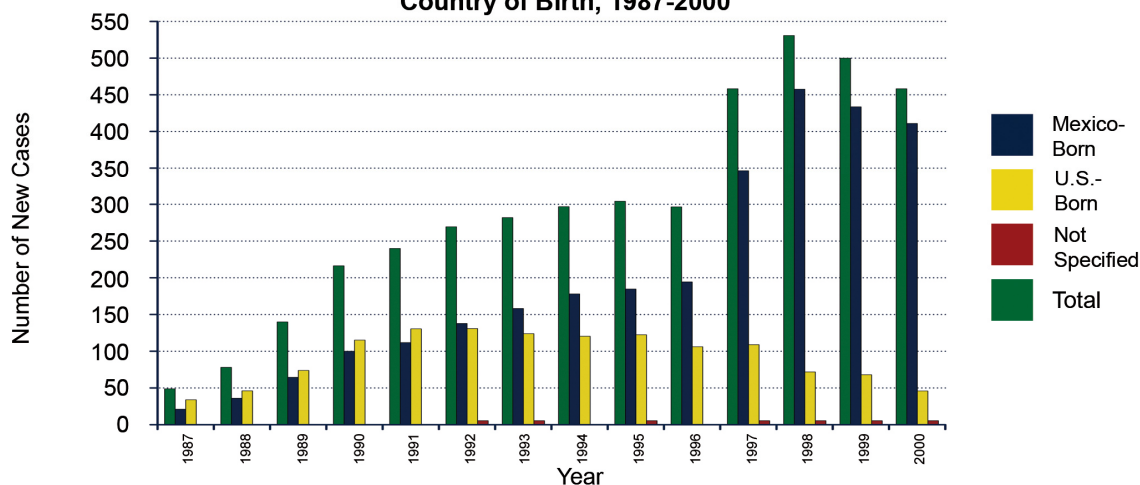
Trends by Country of Birth

New Annual AIDS Cases by Country of Birth

- From 1992 to 2000, the number of AIDS cases of Mexican descent among individuals born in the United States steadily decreased, while the number of AIDS cases of Mexican descent born in Mexico increased steadily until 1999 when it began to decrease. In 2000, there were 45 new AIDS cases among individuals of Mexican descent born in the United States, and 408 among those of Mexican descent born in Mexico (Figure 52).
- The increase in numbers of AIDS cases of Mexican descent born in Mexico that is seen in 1997 and 1998 may be a function of the decrease in underreporting of region of descent. Since this trend is not seen among AIDS cases born in the United States, it is likely that a greater percentage of Hispanic AIDS cases for which region of descent was not specified were those of Mexican descent born in Mexico than those born in the United States. Now that reporting of region of descent has stabilized, trends in cases by country of birth may be more telling.
- Until 1992, individuals born in the United States represented the majority of AIDS cases of Mexican descent in California. Since 1992, individuals born in Mexico have represented the majority of AIDS cases of Mexican descent in California (Figure 54).
- Since 1986, the percentage of cases of Mexican descent that were born in Mexico has been increasing steadily, from 32.1 percent in 1986 to 89.7 percent in 2000 (Figure 53).

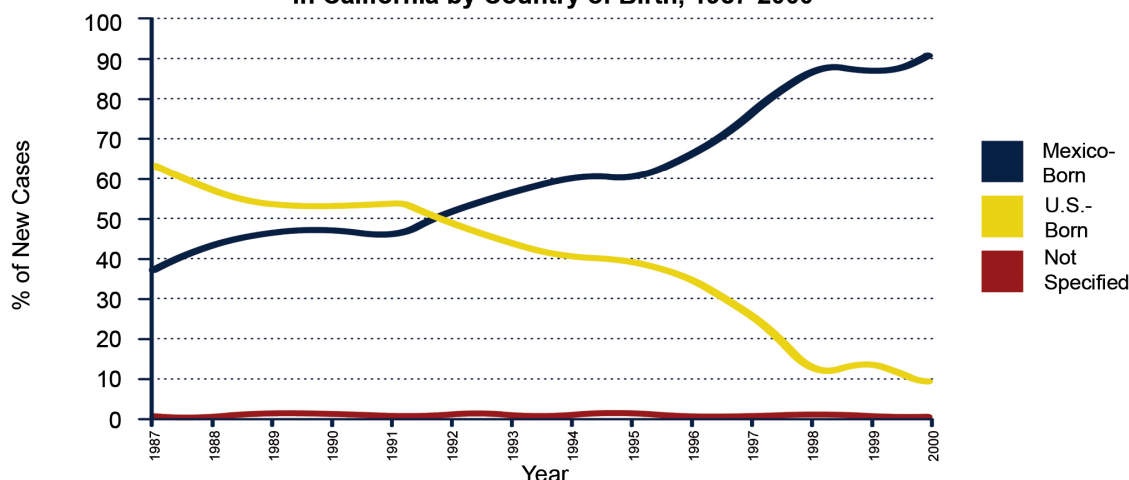
HIV/AIDS Statistics

Figure 52: Trends in New Annual AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Figure 53: Trends in Percent of Total New Annual AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000



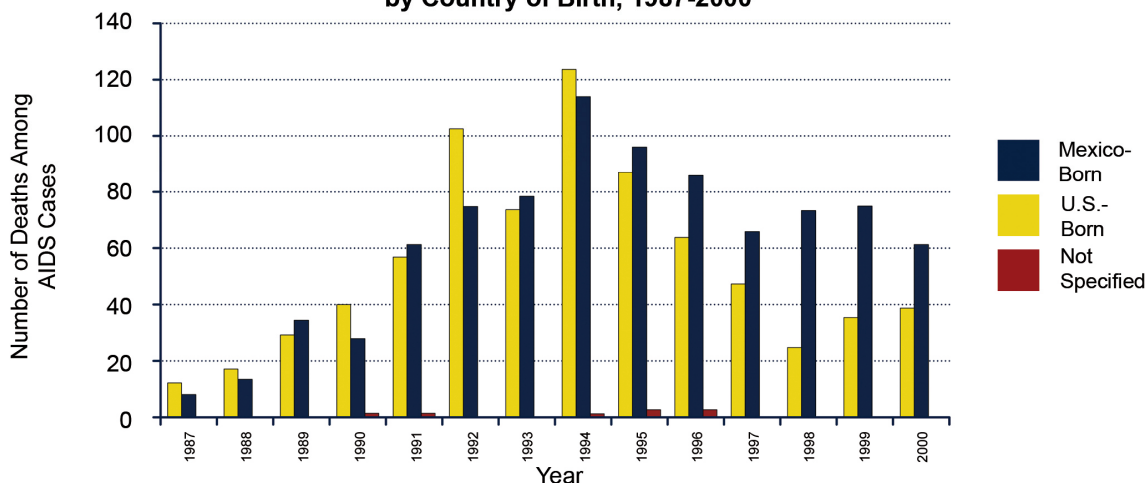
California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Trends in Annual Deaths Among AIDS Cases by Country of Birth

- For AIDS cases of Mexican descent, the number of deaths among persons with AIDS increased from 1987 to 1994, peaking at 124 for those born in the United States and at 114 for those born in Mexico. This trend is seen across countries of origin (Figure 54).
- From 1987 to 1995, the percentages of deaths among AIDS cases of Mexican descent for both those born in Mexico and those born in the United States were consistently between 40-60 percent (Figure 55).
- After 1995, most deaths among AIDS cases of Mexican descent were among those born in Mexico. Beginning in 1998, the percentage of deaths among AIDS cases of Mexican descent born in the United States began to increase, from 24.7 percent in 1998 to 39 percent in 2000 (Figure 55).

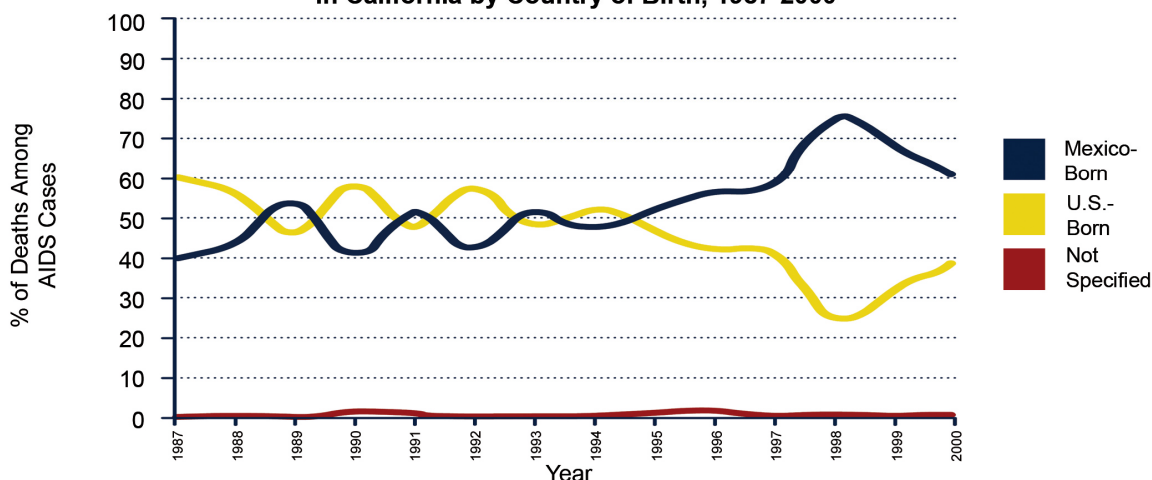
HIV/AIDS Statistics

Figure 54: Trends in Annual Deaths among AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Figure 55: Trends in Percent of Total Annual Deaths among AIDS Cases of Mexican Descent in California by Country of Birth, 1987-2000



California Department of Health Services, Office of AIDS (Figure reflects AIDS cases in California through December 31, 2000, as reported by February 1, 2002.)

Trends by Age at Diagnosis (Data not shown)

Trends in New Annual AIDS Cases by Age at Diagnosis

- Before 1998, the distributions in age of diagnosis fluctuated considerably for Hispanic cases of Mexican descent. This is most likely due to the underreporting of region of descent among Hispanic cases consequently leading to small numbers reported.
- Since 1998, the age distribution of cases has remained relatively stable both for those cases born in the United States and those born in Mexico. These trends appear to reflect those seen among all Hispanic and Californian cases overall.
- The most common age at diagnosis for Hispanic AIDS cases of Mexican descent, both for those born in Mexico as well as for those born in the United States, has

HIV/AIDS Statistics

consistently been 30-39 years of age. Among cases born in Mexico, an average of 41.6 percent of the people diagnosed with AIDS were diagnosed between the ages of 30-39. Among those born in the United States, an average of 48.5 percent of cases were 30-39 years old when they were diagnosed with AIDS.

- The most notable difference in age at diagnosis by country of origin is the percentage of cases diagnosed between the ages of 40-49. Particularly since 1998, a greater percentage of cases of Mexican descent born in the United States have been between the ages of 40-49 at the time of diagnosis compared to cases of Mexican descent born in Mexico.
- The percentage represented by 40-49 year olds has ranged from 14 to 30.4 percent over the years among those born in the United States, declining to 22.2 percent in 2000. For those born in Mexico the percentage of cases diagnosed at this age has ranged between 11.1 to 25.4 percent over the years declining to 18.4 percent in 2000. This may in part be a function of changes in age distributions of the population of Mexican descent during the years of diagnosis; however, intercensal estimates by country of origin and by age are not available to assess to what extent this may be the case.

Trends by Mode of Exposure (Data not shown)

Trends in New Annual AIDS Cases by Mode of Exposure

Among Males

- The most common mode of exposure among cases of Mexican descent has been MSM.
- Among cases of Mexican descent born in Mexico, the trends are similar to those among all Hispanic male cases in that there has been a slight decrease in exposure through MSM, from 72.8 percent in 1997, to 62.8 percent in 2000. In this same population, NIR cases represented 21.7 percent (n=78) of cases in 2000.
- It is difficult to accurately interpret trends in mode of exposure among male cases of Mexican descent born in the United States, due to small numbers of cases reported each year.

Among Females

- Heterosexual contact has been the most common mode of exposure among females of Mexican descent, ranging between 12.5 percent and 66.7 percent among cases born in the United States, and between 25 percent and 89.5 percent among cases born in Mexico.
- It is difficult to accurately interpret trends in mode of exposure among female cases of Mexican descent due to small numbers of cases reported each year.

AIDS CASES IN MEXICO

HIV/AIDS Statistics

AIDS IN MEXICO

From January 1983 to December 31, 2000:

- Cumulative AIDS cases: 47,617.
- Number of deaths among AIDS cases: 26,141; 54.9 percent of all AIDS cases in Mexico.
- Living: 18,704; 39.3 percent of all AIDS cases in Mexico.
- Unknown: 2,772; 5.8 percent of all AIDS cases in Mexico.

Cumulative AIDS Cases in Mexico

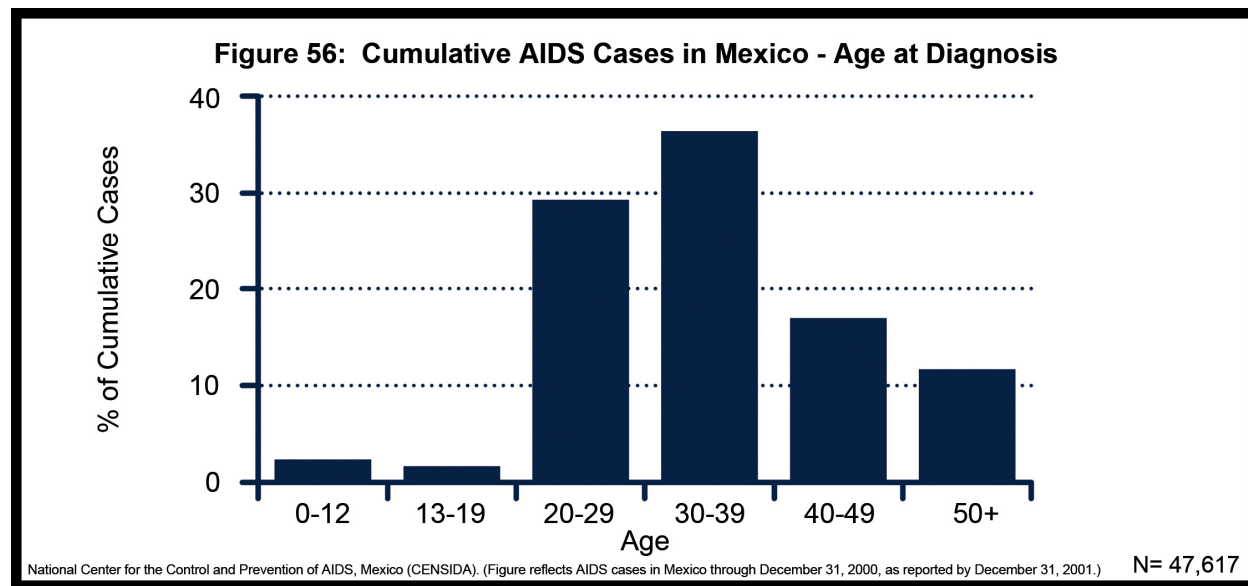
Cumulative AIDS cases: 47,617.

Gender

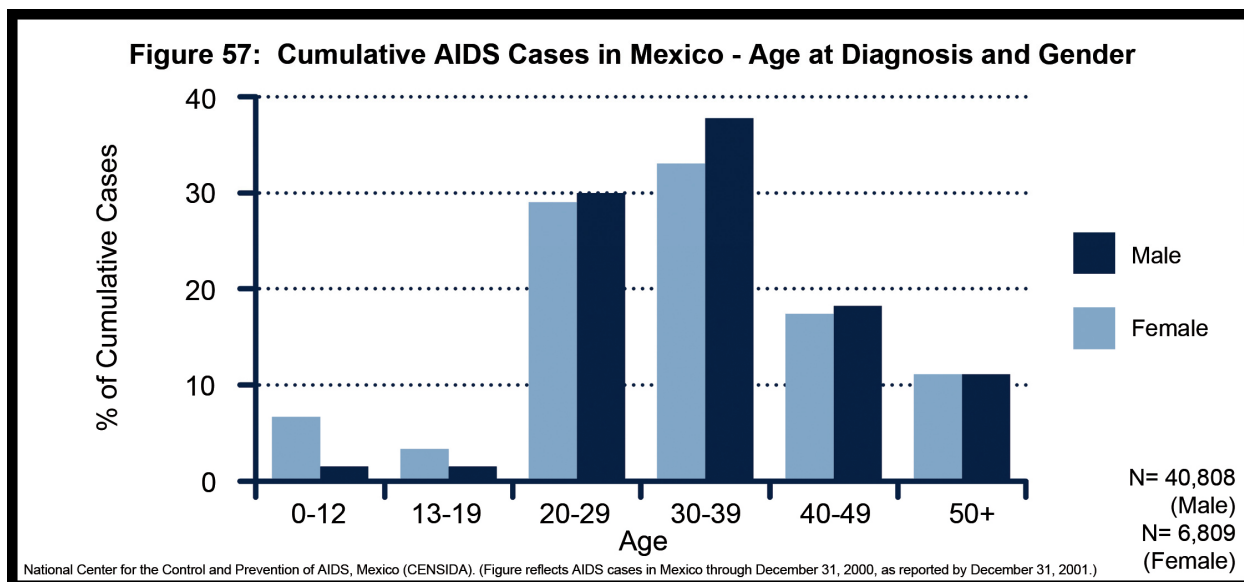
- As in cumulative Californian cases of Mexican descent, the majority of cumulative AIDS cases reported in Mexico are male. Of these cases, 85.7 percent are male (40,808 AIDS cases) and 14.3 percent are female (6,809 AIDS cases; data not shown).

Age at Diagnosis

- Similar to Californian cases of Mexican descent, the highest concentration of cases in Mexico were diagnosed between the ages of 30-39 (36.4 percent). The second highest concentration falls between the ages of 20-29 (29.3 percent; Figure 56).
- Less than five percent of cumulative AIDS cases in Mexico were diagnosed before the age of 20 (Figure 56).
- More females than males are diagnosed between the ages of 0-19, and more males than females are diagnosed between the ages of 20-49. Equal numbers of males and females are diagnosed above age 50. (Figure 57).



HIV/AIDS Statistics

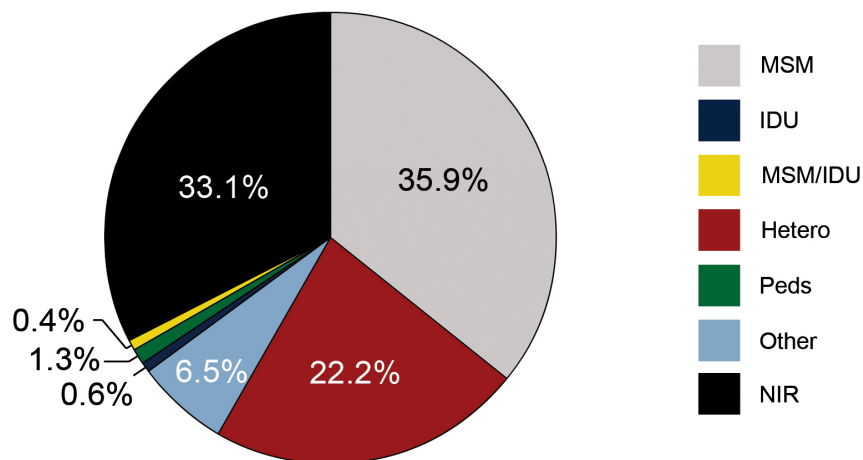


Mode of Exposure

- MSM represent the greatest percentage of cumulative AIDS cases in Mexico (35.9 percent). The second most common known mode of exposure among cases in Mexico is heterosexual transmission (22.2 percent; Figure 58).
- The percentage of cumulative AIDS cases which are the result of pediatric exposure is very low among all cumulative AIDS cases in Mexico (1.3 percent), and injection drug use accounts for an even smaller percentage of reported AIDS cases (0.6 percent; Figure 58).
- Risk is not identified for 33.1 percent of cases in Mexico. This proportion of cases is much higher than that seen among cases of Mexican descent in California, where mode of exposure is nonidentified for approximately 9.7 percent of individuals of Mexican descent diagnosed with AIDS (Figure 58).
- As is the case with California male cases of Mexican descent, among reported male AIDS cases in Mexico, MSM accounts for the greatest percentage of cases (41.8 percent; Figure 59). This percentage, however, is lower than that seen among cases of Mexican descent in California, even when excluding cases of unspecified mode of exposure.
- Among female AIDS cases in Mexico, heterosexual contact is the primary mode of exposure, accounting for approximately 39.3 percent of all cumulative female AIDS cases. The second most common mode of exposure among female AIDS cases in Mexico is categorized as "other," accounting for 21.2 percent of cumulative female cases (Figure 59). Most of these are blood-related exposures.
- Among all AIDS cases diagnosed between the ages of 20-49, MSM accounts for the majority of exposures. The greatest proportion attributed to heterosexual contact is seen among cases diagnosed at 50 years of age or older (40 percent; Figure 60).

HIV/AIDS Statistics

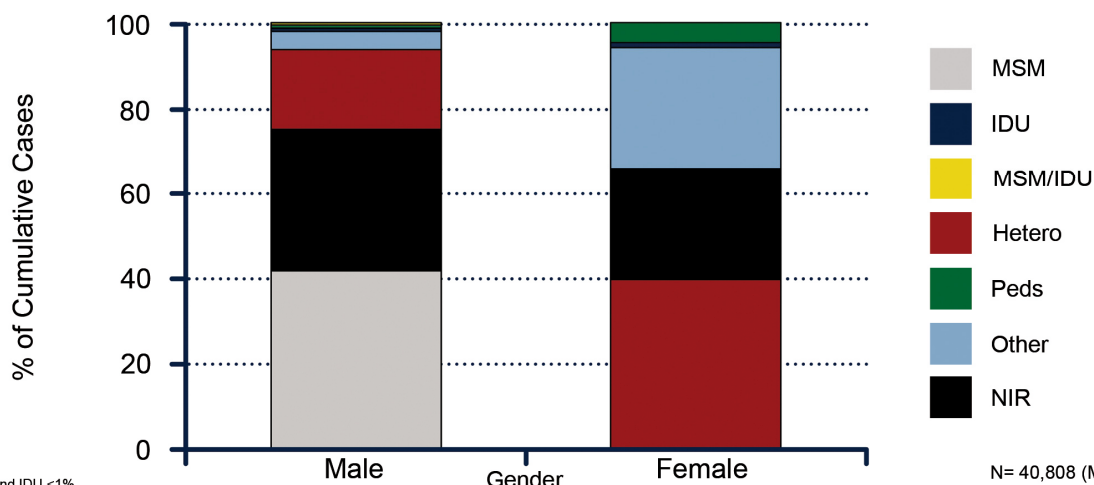
Figure 58: Cumulative AIDS Cases in Mexico - Mode of Exposure



National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.) N= 47,617

*NIR indicates "Non-Identified Risk."

Figure 59: Cumulative AIDS Cases in Mexico - Mode of Exposure and Gender



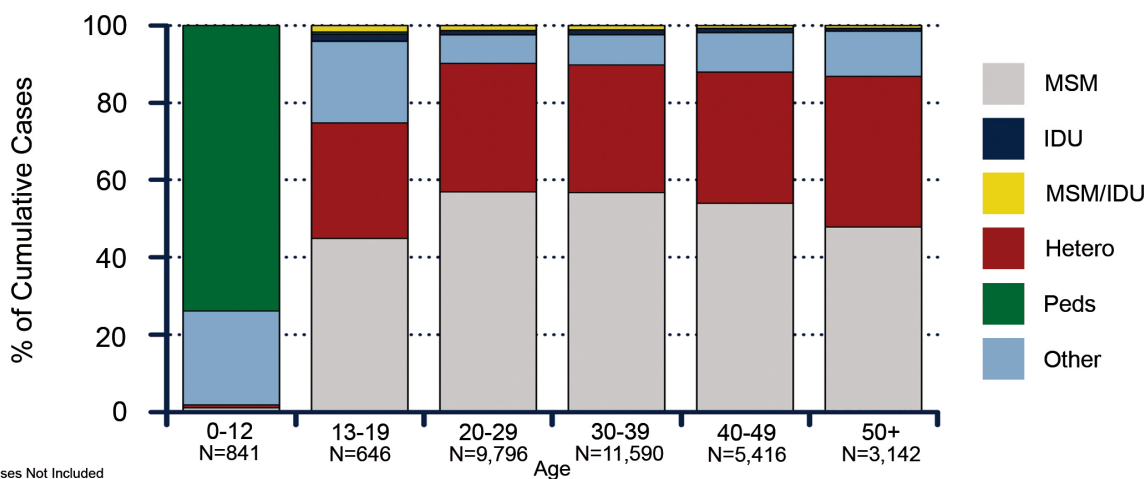
* MSM/IDU and IDU <1%

National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.) N= 40,808 (Male) N= 6,809 (Female)

*NIR indicates "Non-Identified Risk."

HIV/AIDS Statistics

Figure 60: Cumulative AIDS Cases in Mexico - Mode of Exposure and Age at Diagnosis

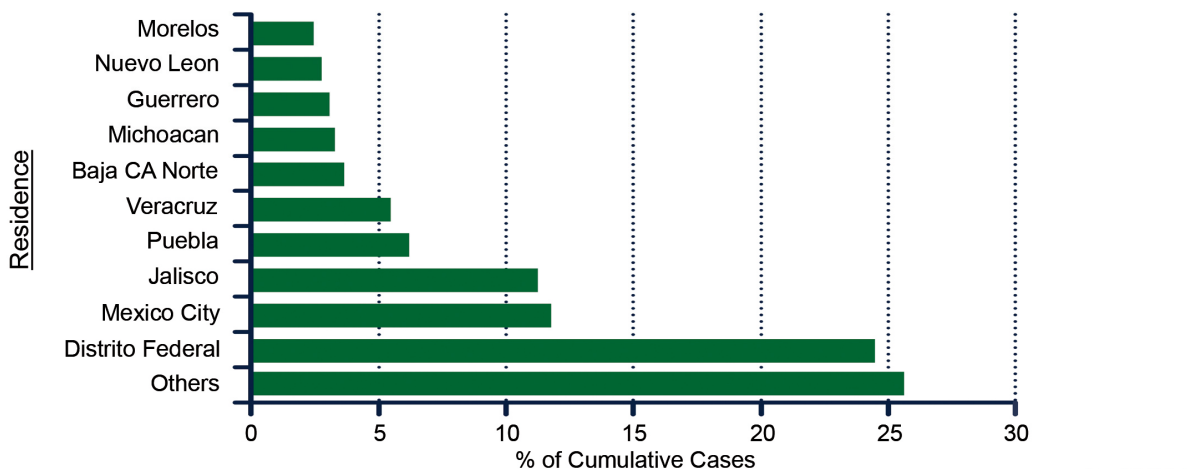


*NIR indicates "Non-Identified Risk."

Residence at Diagnosis

- Nearly 50 percent of all AIDS cases reported in Mexico resided in one of three areas at the time of diagnosis: Distrito Federal (24.4), Mexico City (11.7 percent), and Jalisco (11.2 percent). Other areas that account for more than five percent of AIDS cases are Puebla and Veracruz. Baja California Norte and Michoacan each account for approximately four percent of cumulative cases (Figure 61).

Figure 61: Cumulative AIDS Cases in Mexico - Residence at Diagnosis



Note: These percentages may to some degree reflect the geographical distribution of the general population of Mexico.

HIV/AIDS Statistics

Living AIDS Cases in Mexico

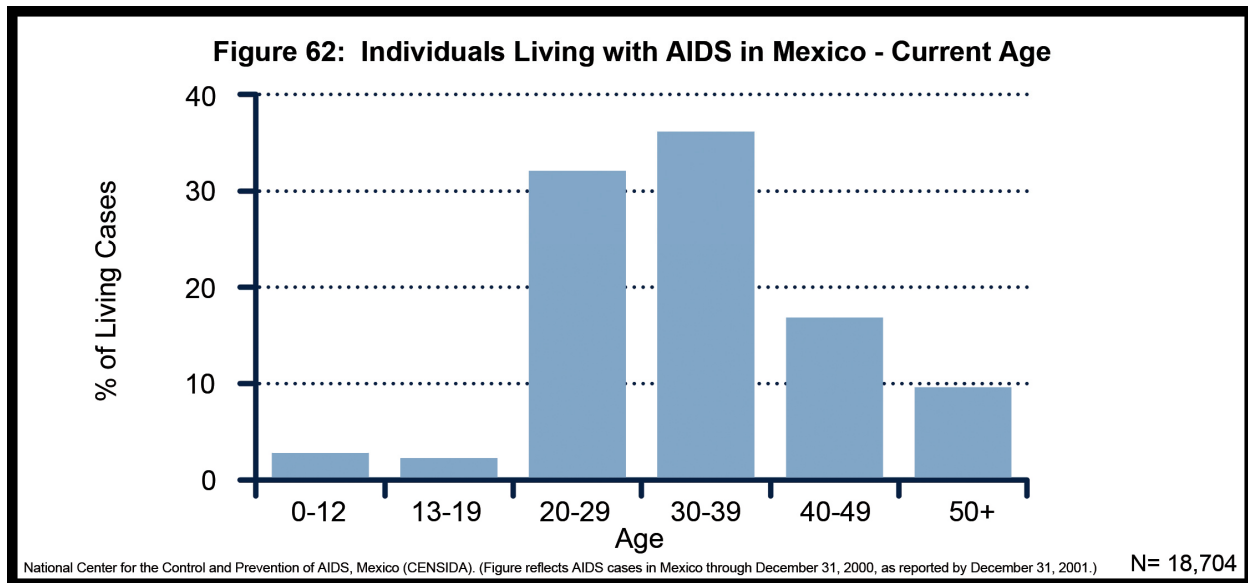
Number of living AIDS cases in Mexico: 18,704 (39.3 percent of all cumulative AIDS cases reported in Mexico).

Gender

- As with all living AIDS cases of Mexican descent in California, the majority of living AIDS cases in Mexico are male. Of the AIDS cases living in Mexico as of December 2000, 85.3 percent are male and 14.7 percent are female (data not shown).

Current Age

- Approximately 91 percent of all living AIDS cases in Mexico are age 20 or older, with the highest concentration of cases between the ages of 20-39 (67.8 percent; Figure 62).
- For both men and women, the majority of those living with AIDS are between the ages of 20-39 (69.6 percent in men and 63.7 percent in women; data not shown).
- It appears that AIDS cases in Mexico are younger than AIDS cases of Mexican descent in California, as the majority of the former are between 20-39 years old (68.8 percent; Figure 62) while the majority of the latter are between 30-49 years old (50.9 percent; data not presented).

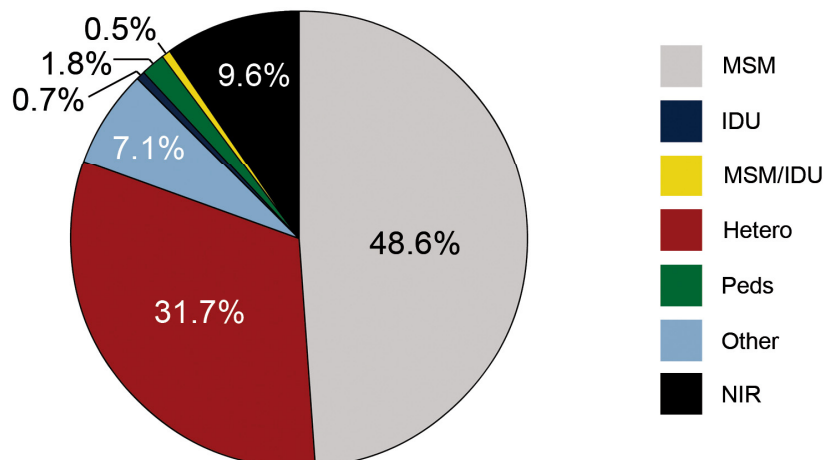


HIV/AIDS Statistics

Mode of Exposure

- MSM accounts for nearly half (48.6 percent) of all living AIDS cases in Mexico, followed by heterosexual transmission (31.7 percent; Figure 63).
- Only 0.7 percent of all living AIDS cases are attributable to injection drug use (Figure 63). This is again much lower than the percentage seen among AIDS cases of Mexican descent (Figures 48 and 49).
- The majority of living male AIDS cases in Mexico was exposed through MSM (57 percent), followed by heterosexual contact (27.4 percent; Figure 64). Heterosexual contact accounts for a smaller percentage of exposures among males living with AIDS in Mexico compared to individuals of Mexican descent with AIDS in California, however this is in large part due to the greater percentage of cases of “other” modes of exposure seen among male AIDS cases in Mexico than that seen among AIDS cases of Mexican descent in California (in Mexico: 27.4 percent; in California, United States-born: 1.5 percent; in California, born in Mexico: 3.4 percent; Figures 48 and 64).
- Over half (56.3 percent) of all women living with AIDS in Mexico were exposed through heterosexual contact. While injection drug use is the second most common mode of exposure among females of Mexican descent with AIDS in California, the second most common mode of exposure for female AIDS cases in Mexico falls in the “other” category (25.6 percent). Most of these are blood-related exposures. Injection drug use accounts for 0.9 percent of female AIDS cases in Mexico, 9 percent of Mexican-born female AIDS cases in California, and 31.8 percent of United States-born female AIDS cases in California (Figures 49 and 64). These relationships are similar even after considering the greater percentage of NIR cases among these first two groups.

Figure 63: Individuals Living with AIDS in Mexico - Mode of Exposure



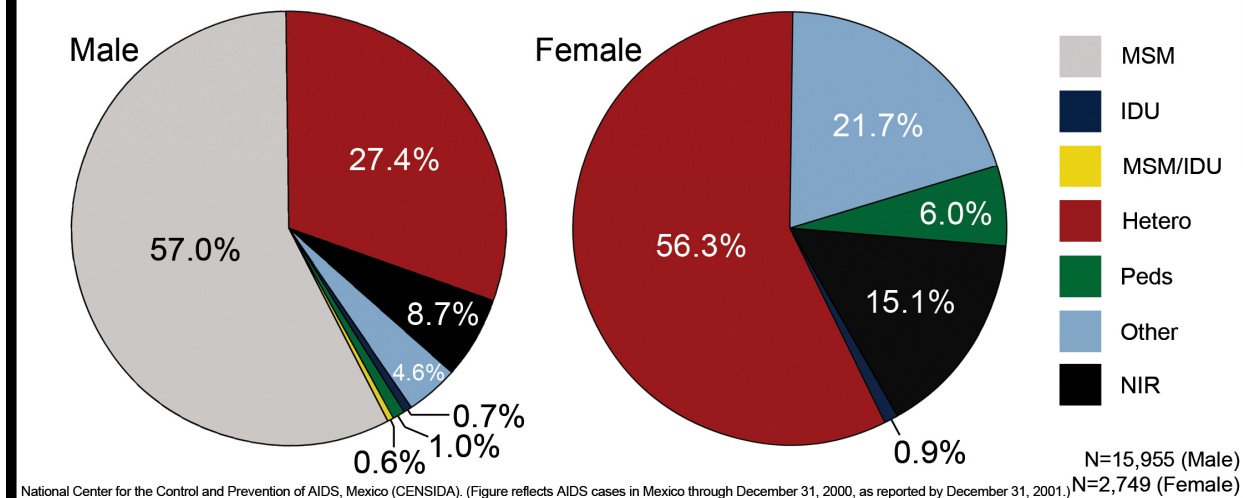
National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.)

N= 18,704

*NIR indicates “Non-Identified Risk.”

HIV/AIDS Statistics

Figure 64: Individuals Living with AIDS in Mexico - Mode of Exposure and Gender

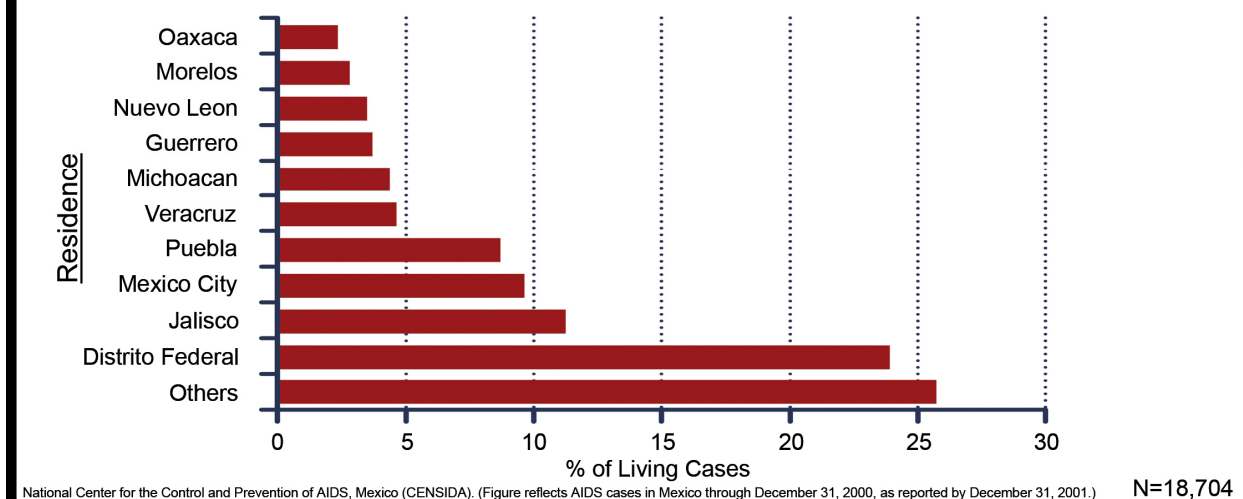


*NIR indicates "Non-Identified Risk."

State of Residence at Diagnosis

- More than 50 percent of individuals living with AIDS in Mexico resided in one of four states at the time of their AIDS diagnosis: Distrito Federal (23.9 percent), Jalisco (11.2 percent), Mexico City (9.6 percent), and Puebla (8.7 percent; Figure 65). Veracruz, Michoacan, and Guerrero each accounted for approximately four percent of cases living with AIDS. The distribution of AIDS cases in Mexico has changed over time, as the locations of cumulative AIDS cases are different from the locations of living AIDS cases.

Figure 65: Individuals Living with AIDS in Mexico - Residence at Diagnosis



Note: These percentages may to some degree reflect the geographical distribution of the general population of Mexico.

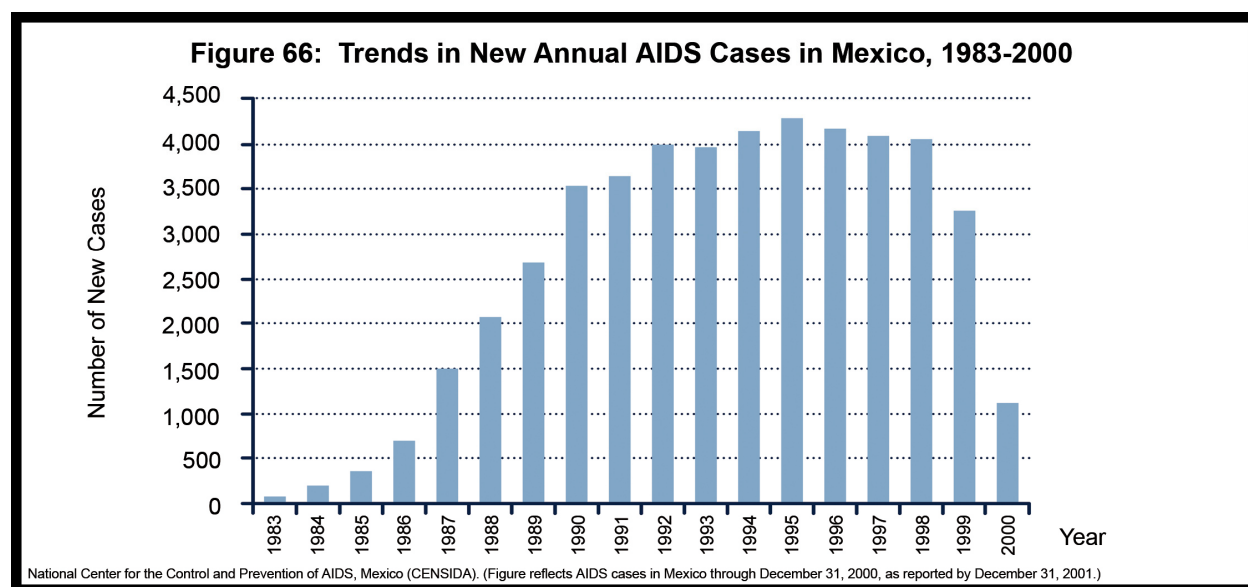
HIV/AIDS Statistics

AIDS Trends in Mexico

- In Mexico, AIDS cases are classified by year of diagnosis.
- The delay of notification produces an AIDS epidemic curve that is incomplete for the last five years (1996-2000). AIDS cases diagnosed through 1995 are complete.

Trends in New Annual AIDS Cases

- The number of new annual AIDS cases in Mexico rose sharply from the beginning of the epidemic in 1983 (with 60 cases) to its peak in 1995 (with 4,268 cases). Since 1993, the number of new annual cases stabilized to an extent and remained roughly around 4,000 (Figure 66).

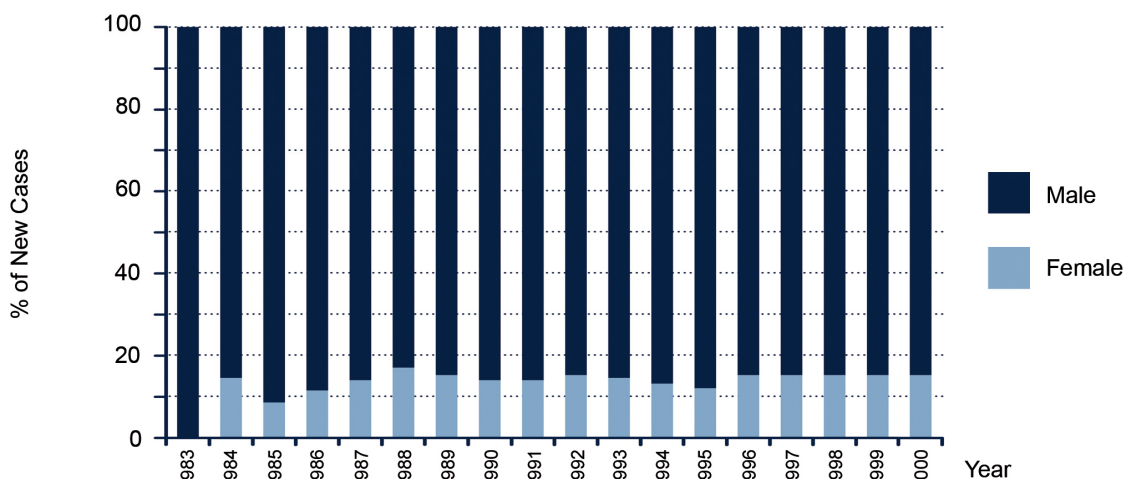


Trends in New Annual AIDS Cases by Gender

- The proportion of male to female AIDS cases has been stable across all years of the epidemic in Mexico (Figure 67). Throughout the years the epidemic has occurred mostly among males; the percentage of new cases represented by males ranged between 83.3 percent (in 1984) and 88.6 percent (in 2000).

HIV/AIDS Statistics

Figure 67: Trends in Percent of Total New Annual AIDS Cases in Mexico by Gender, 1983-2000

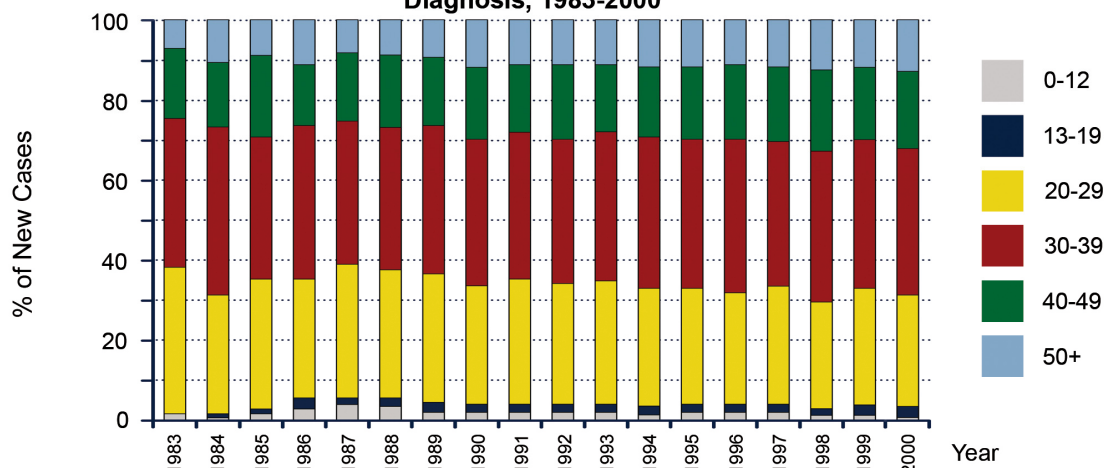


National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.)

Trends in New Annual AIDS Cases by Age at Diagnosis

- The percentage of total new AIDS cases diagnosed before the age of 20 has been decreasing in recent years (Figure 68). This is different from data on AIDS cases of Mexican descent in California, as in this population the percentage of total newly diagnosed AIDS cases in each age group has remained relatively stable.
- The population between 30-39 years of age has been the most affected group in Mexico (representing 36.5 percent of all AIDS cases in 2000), followed by the group of 20-29 years of age (27.9 percent of all AIDS cases in 2000; Figure 68). The most affected age group among cases of Mexican descent in California has also been the 30-39 years of age group.
- In 2000, more than half of all the newly diagnosed AIDS cases were between the ages of 20-39 (64.4 percent). Approximately 19.2 percent of these cases were diagnosed at 40-49 years of age, 12.8 percent above the age of 50, and 3.5 percent below the age of 20 (Figure 68).

Figure 68: Trends in Percent of Total New Annual AIDS Cases in Mexico by Age at Diagnosis, 1983-2000



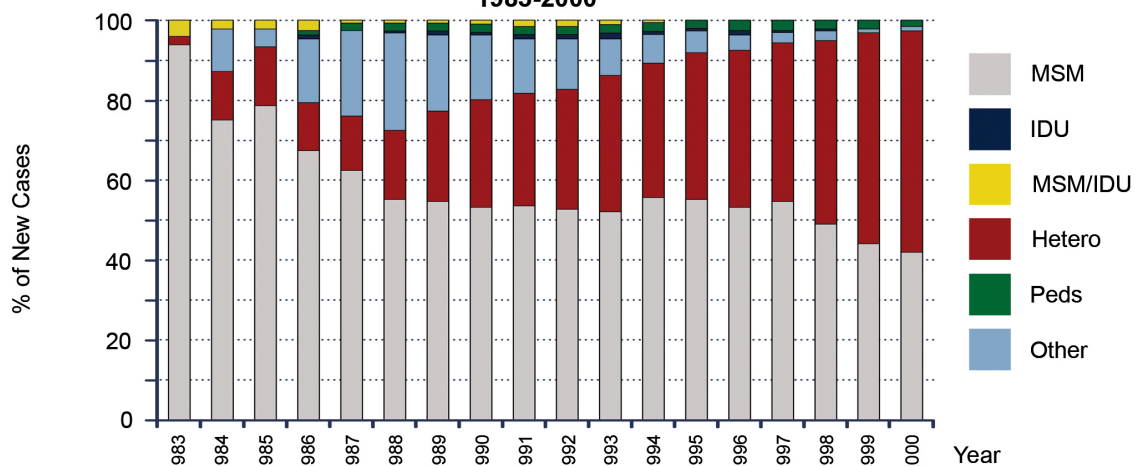
National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.)

HIV/AIDS Statistics

Trends in New Annual AIDS Cases by Mode of Exposure

- MSM had been the most common mode of exposure to HIV from the beginning of the epidemic until 1998. During this time, the percentage of cases exposed in this manner steadily decreased from 93.9 percent in 1983 to 48.9 percent in 1998. In both 1999 and 2000, the percentage of cases exposed through heterosexual contact was greater than that exposed through MSM contact, 53 percent versus 44.1 percent, respectively, in 1999 and 55.5 percent versus 41.9 percent in 2000 (Figure 69).
- The percentage of newly diagnosed AIDS cases exposed through heterosexual contact has been increasing since 1986, from 11.7 percent that year to 55.5 percent in 2000.
- Since 1988, there has been a decrease in the percentage of cases reporting other exposures, from 24 percent to 0 percent in 2000 (Figure 69).
- Throughout the years, cases due to MSM/IDU, pediatric exposure, or injection drug use alone have collectively represented less than five percent of the total AIDS cases (Figure 69). The Mexican AIDS epidemic continues to be concentrated among MSM and heterosexual partners.

Figure 69: Trends in Percent of Total New Annual AIDS Cases in Mexico by Mode of Exposure, 1983-2000



*NIR Cases Not Included

National Center for the Control and Prevention of AIDS, Mexico (CENSIDA). (Figure reflects AIDS cases in Mexico through December 31, 2000, as reported by December 31, 2001.)

Section III:

POSSIBLE STRATEGIES TO ENHANCE HIV/AIDS SURVEILLANCE AMONG MIGRANTS

Enhancing HIV/AIDS Surveillance Among Migrants

The information presented in the previous sections provides an overview of the HIV/AIDS surveillance systems in California and Mexico and an assessment of AIDS in both regions. Cumulative, prevalent, and incident AIDS statistics (through 2000) were provided for both California and Mexico. The California data can be stratified by United States and Mexican-born cases of Mexican descent, but cannot be stratified further for Mexicans who migrate locally, nationally, or internationally.

Determining what we know and what we need to know is critical as we take the next steps in determining how we can improve data gathering and management systems in both California and Mexico to provide a more accurate and complete picture of HIV/AIDS in these regions. The following section presents possible ways in which California and Mexico can work together to improve binational surveillance and enhance collaboration in an attempt to more effectively prevent HIV transmission in the vulnerable migrant population. We acknowledge that there are logistical and fiscal challenges. The financial and structural feasibility of these strategies will need to be discussed further in future meetings. Jointly presenting possible strategies at this time is an initial step to discussing and actualizing these and other approaches that may arise from further discussion.

The Mexican migrant population in both California and Mexico faces unique and serious health risks. This report is focused on the risk of HIV/AIDS, specifically. However, due to factors such as inconsistent health care, lack of health insurance, insecure income, and stressful or difficult living and working conditions, the Mexican migrant population is also at risk for other health conditions, such as diabetes, hypertension, cardiovascular disease, etc. The disease surveillance systems, including the HIV/AIDS surveillance systems, currently in place in both Mexico and California, while effective for tracking the burden of disease in their respective nonmigratory populations, fail to capture reliable information about the many thousands of people who regularly cross the California-Mexico border. Depending on the existing systems, we are, thus, left to proceed with little information when attempting to assess not only HIV status, but also the overall health status of this population over time and place. Considering the HIV risk among migrants and the inconsistent health care that this population receives, it is crucial that California and Mexico continue to support functionally efficient collaborations and work together to enhance surveillance of this population and develop programs to prevent disease and promote health among migrants and among those with whom migrants interact. To begin to address this need, several ideas have been discussed: enhancement of existing surveillance capabilities; development of a comprehensive binational surveillance system; establishment of a binational executive committee; and continuation of collaborative epidemiologic studies.

Enhance Existing Surveillance Capabilities

One method that can be used to enhance HIV/AIDS surveillance in the migrant population is to build upon currently existing surveillance instruments that are used in Mexico and California. This can be done by matching HIV/AIDS surveillance data to other databases to obtain more information about cases, as well as by incorporating

Enhancing HIV/AIDS Surveillance Among Migrants

more routine questions pertaining to migration on the HIV/AIDS case report form used for HIV/AIDS surveillance.

Matching HIV/AIDS data to vital statistics records in the United States and Mexico would provide more information about AIDS cases. Death certificates contain information on country of origin, occupation, and length of stay in the United States. Mexican vital statistics could provide information on individuals that are diagnosed in the United States and who return to Mexico before death. HIV/AIDS data could also be compared to other disease registries such as cancer and diabetes as well as to large cohort studies of migrant populations. The inherent weakness in this approach, however, is that it only provides information on those who are either deceased or have other diseases, information which would clearly not be generalized to the broader population.

In both Mexico and California, a case report form is completed for each individual who is diagnosed with AIDS. It is completed either by abstracting data from medical charts or by directly interviewing patients. It may be possible to enhance surveillance of migrants by determining whether individuals migrate to the United States for work. Important questions that could be added to this form include previous residence(s) within the last year, date of immigration to the United States and return to Mexico, and type and location of jobs held within the last year. Adding additional variables would help in determining migrant status, whether they are seasonal or migrant workers, or urban day laborers or both, and whether they migrate locally, nationally, or internationally.

Variables that are currently optional on the HIV/AIDS case report form in California could be made mandatory. These include "Expanded Race" and "Country of Origin." Since these variables are not currently required, the information is often missing for many cases. Collection of this information would allow for analysis of Hispanic/Latino subethnicity and the subsequent design of culturally and linguistically appropriate prevention plans.

It is important to acknowledge obtaining this information may be difficult. If information for the recommended variables is not recorded on the report form, review of medical charts may not prove useful as this type of information is not routinely collected and recorded in medical charts. Furthermore, a patient may be unwilling or unable to answer some of these questions because of fear or linguistic barriers. This effort would need to be matched with language-specific education and information to assuage individuals' concerns regarding the information-gathering process.

Adding questions to the case report forms to enhance existing surveillance systems will not be sufficient, however, for collecting data on migrant populations. The current systems are limited in that they are unlikely to capture a representative sample of the migrant population. These systems can only gather information from individuals who access health care services, possibly creating bias in the data. Individuals who access health care services may differ from those who do not access services (i.e., perhaps

Enhancing HIV/AIDS Surveillance Among Migrants

more informed about health care services, more concerned about HIV/AIDS risk and prevention, better able to access health care).

There are several issues that make it difficult to obtain reliable and adequate information about the migrant population in California and Mexico using existing systems. First, U.S. federal agencies have different ways of defining “migrant workers.” This inconsistent terminology creates challenges to ensuring common classification techniques when attempting to pool data and estimate disease prevalence and/or incidence. Second, although regional health care clinics are a common source of surveillance data, migrant workers often lack the time, transportation, and/or money to visit these clinics.

In addition, cultural, economic, social, and linguistic barriers in California can prevent migrants from accessing health care services. For example, these individuals may not be accustomed to accessing regular primary care, and hospitals and clinics may only be visited in the event of severe illness or injury. When visiting clinics in California, language barriers and discomfort discussing sensitive subjects may preclude discussion of important topics. Furthermore, the nature of migrant populations is that they are highly mobile and geographically dispersed. This makes it unlikely that individuals see the same health care practitioner regularly and, in fact, it is likely that they see providers on both sides of the border. The result is that existing surveillance systems on either side of the border can only capture a portion of an individual’s health history.

Tracking urban migrants is especially challenging, as they often hold several jobs simultaneously. It is clearly difficult, if not impossible, to avoid duplication when following the trail of individual records. Furthermore, many of the Mexican migrants in California and Mexico do not visit health care centers regularly. Thus, we are faced with a situation in which we cannot rely on traditional clinic surveillance data alone to provide detailed and comprehensive information on HIV/AIDS and other health issues prevalent in the Mexican migrant population.

The limitations described above make conducting effective surveillance extremely difficult using the mechanisms currently available in both California and Mexico. It is crucial that California and Mexico work together to address this situation in order to develop programs to prevent disease and promote health care among migrants and among those with whom migrants interact. In short, California and Mexico must develop and implement a binational surveillance system to enable functionally efficient collaborations between them. To begin to address this need, we have outlined below several strategies.

Develop a Comprehensive Binational Surveillance System

A binational surveillance system developed specifically for the Mexican migrant population would be the most efficient means of gathering the information necessary to design effective prevention programs in California. The overall purpose of this binational surveillance system would be to provide a detailed picture of the Mexican

Enhancing HIV/AIDS Surveillance Among Migrants

migrant population. The system would, therefore, need to be both extensive and comprehensive, including both rural and urban migrant populations, as well as indigenous Mexican populations living in all areas of California. As many migrants do not have access to health care services or do not frequent traditional health care settings, employing promotoras to conduct active surveillance in migrant communities would be an essential component to any surveillance system with objectives of obtaining information on this population. Data gathered should focus on demographic, behavior, and disease surveillance, and tools and instruments would need to be both language-specific and culturally sensitive. Developing a binational surveillance system would prevent confusion resulting from multiple records and the use of different migrant definitions. Furthermore, it would provide a single, detailed database of information describing the complex needs and realities of the Mexican migrant population in California.

The proposed system would improve demographic surveillance by helping to identify the number of migrants living in California. This information would enable health care professionals to focus prevention efforts to reach the greatest number of migrants. The system would also allow researchers to track demographic changes in the population over time, helping to determine which prevention efforts are needed in particular areas within the state.

Binational behavioral surveillance information would help researchers identify migratory patterns, which in turn, would aid in predicting future population changes and future prevention needs. For example, seasonal patterns would help to direct prevention plans towards the populations at greatest need at a particular time (agricultural workers in the winter and urban workers in the summer, for example). In addition, behavioral surveillance would allow for the evaluation of risk behaviors within the migrant population. Although some risk behaviors have already been identified, such as injection drug use and low condom use, currently there is no system in place to estimate the prevalence and extent of these behaviors.

Lastly, binational surveillance would identify health care needs of the migrant population. The proposed surveillance system would collect data on HIV/AIDS prevalence and incidence. Information on HIV/AIDS trends is important in predicting the future course and epidemic among this population and planning appropriate programs. In addition to assessing HIV/AIDS burden, the surveillance system should gather through self-report, information on health conditions, including cancer, diabetes, dental disease, and other infectious diseases. This information will allow health care professionals to direct prevention efforts, so that specific programs can be developed that target the most serious conditions faced by a particular population of migrants at a particular time.

As with any surveillance system, in particular one that collects HIV/AIDS related information, there are several possible limitations to collecting adequate and accurate data with this system. Many migrants are reluctant to report behaviors that carry with them social and cultural stigmas. Furthermore, migrants may be more likely to avoid

Enhancing HIV/AIDS Surveillance Among Migrants

testing or accessing health care if they know that their status would be reported. Thus, the proposed binational surveillance system, like all surveillance systems, must incorporate culturally sensitive research instruments specifically designed to address concerns about confidentiality. In addition, methods used when gathering information must respect individuals' privacy.

Due to the fact that Mexican migrants move back and forth between California and Mexico, a bilateral surveillance system between the two regions will be critical in assessing the health needs of this population. Binational surveillance will help to reduce loss to follow-up or breaks in continuity of care that generally occur when individuals migrate across national borders. Information gathered in the United States can be supplemented by information gathered in Mexico, leading to a more complete picture of the needs of migrants.

A bilateral surveillance system will also serve to improve the health of those living along the California-Mexico border. Areas along the border are extremely impoverished, with a high incidence of disease due to unsanitary living conditions and lack of public health care infrastructure. Due to the relatively free flow of migrants across the border, the efforts of one country alone will not adequately address the multitude of issues that affect this population. Dedicated efforts must be made in both California and Mexico to ensure that interventions to prevent illness and promote health care are conducted with sustained energy and persistence. Binational cooperation and ongoing communication will be essential to ensure that successes on both sides of the border can be maintained.

Establish a Binational Executive Committee

A binational Executive Committee for HIV/AIDS Evaluation and Action, if established, could assist in ensuring ongoing communication and effective collaboration. This committee should represent a diverse group of health care researchers, physicians, and public health care professionals from Mexico and California. Initially, this team should meet to discuss and identify effective, culturally and linguistically appropriate methods of conducting HIV/AIDS and health surveillance in the migrant population. This committee could be responsible for conducting secondary data review and synthesis as well as sponsoring formative research to address gaps in information about methodology. Members of the committee should share the responsibilities of reviewing and interpreting surveillance data, and should engage in both short- and long-term planning strategies to address the most pressing needs of the migrant population. The executive committee's role will be critical in ensuring the success and ongoing commitment of both countries to assessing and improving the health of the Mexican migrant population. The success of such a committee, however, will depend largely on funding availability, and as such fiscal considerations will need to be discussed further.

Enhancing HIV/AIDS Surveillance Among Migrants

Continue Collaborative Epidemiologic Studies

Cross-sectional studies conducted in nontraditional sites would assist in gathering data on groups that may not visit health care settings traditionally used for HIV/AIDS surveillance. Seroprevalence, incidence, and epidemiological and qualitative behavioral studies would help identify risk factors for HIV transmission, obtain HIV estimates, and describe study population demographics, including country of origin, occupation, and migratory patterns. Although we cannot assume that individual cross-sectional studies would be representative of the entire California or United States migrant population, information gathered could provide a basis for future studies and might identify better ways to conduct HIV/AIDS surveillance in the general migrant population.

Conclusion

The purpose of this report has been to describe the unique challenges facing California and Mexico in addressing concerns relating to the health of the migrant population. We described current HIV/AIDS surveillance systems active in both California and Mexico, pointing out the current inability of these systems to track and document migrants who live their lives in both regions. California and Mexico HIV/AIDS incidence and prevalence statistics, as well as existing surveillance methodology, were presented to highlight data we know, and to illustrate the type of information that we lack about migrants. We discussed concerns about migrants' risk of HIV/AIDS and other ill health to expose the implications of missing data and bilateral inaction. Finally, we have presented some possible strategies to improve information exchange between California and Mexico, culminating in a call for a binational surveillance system to be monitored by an executive committee of representatives from both sides of the border.

The hope is that this report will represent an important step in forwarding the process of ongoing communication and collaborative action. Given that a common goal of California and Mexico is to protect, promote, and provide for the health of migrants in California and Mexico, the potential for binational cooperation and success is highly promising.

REFERENCES

References

1. Bustamante, J., Mexico United States Labor Migration Flows. *International Migration Review* 1997; 31:1112-1121.
2. Slesinger, D., Ofstead, C., Economic and Health Needs of Wisconsin Migrant Farm Workers. *J Rural Health* 1993 Spring; 9:138-148.
3. Migrant and Seasonal Farmworker Health Perspective Paper. National Association of Community Health Centers, 2001.
4. Villarejo, D., Lighthall, D., Williams D., et al. Suffering in Silence: A Report on the Health of California's Agricultural Workers. California Institute for Rural Studies, November 2000.
5. Bechtel, G., Shepherd, M., Rogers, P., Family, Culture, and Health Practices Among Migrant Farmworkers. *J Community Health Nurs* 1995; 12:15-22.
6. HIV/AIDS: A Growing Crisis Among Migrants and Seasonal Farmworker Families. National Commission to Prevent Infant Mortality, 1993.
7. McCarthy, M., Fighting for Public Health Along the U.S.A.-Mexico Border. *Lancet* 2000 Sep; 356:1020.
8. Wilk, V., Occupational Health of Migrant and Seasonal Farmworkers in the U.S.: Progress Report. Farmworker Justice Fund, 1988.
9. Cassetta, R., Needs of Migrant Workers Challenge RNs. *The American Nurse* 1994; 26:34.
10. Seroprevalence of HIV and Syphilis, and Assessment of Risk Behaviors Among Migrant and Seasonal Farmworkers. California Department of Health Services, Office of AIDS, June 1997.
11. Inciardi, J., Surratt, H., Colon, H., Chitwood, D., Rivers, J., Drug Use and HIV Risks Among Migrant Workers on the DelMar Peninsula. *Subst Use Misuse* 1999 Mar-Apr; 34:653-66.
12. Magana, J., Sex, Drugs, and HIV: An Ethnographic Approach. *Soc Sci Med* 1991; 33:5-9.
13. Organista, K., Balls Organista, P., Garcia de Alba, G., Castillo Moran, M., Ureta Carrillo, L., Survey of Condom-Related Beliefs, Behaviors, and Perceived Social Norms in Mexican Migrant Laborers. *Journal of Community Health* 1997 June; 22:185-198.
14. Mexico's Population in the New Century. Mexico's National Population Council, July 2001.
15. Worby, P., Binational Forum on Migrant Health: Analysis and Commentary, University of California, Berkeley, October 18-19, 2001.
16. Smith, J., U.S., Mexico Team Up on Health Care; Medicine: Seeking to Reduce Ailments in Border Towns and Among Migrants, Nations are Launching a Number of Cooperative Programs. Los Angeles Times, Los Angeles, CA, Oct 17, 2001.
17. Migrant and Seasonal Farmworker Enumeration Profiles Study, 2000.
18. Profile of a Population With Complex Health Problems. National Center for Farmworker Health, February 18, 2002.
19. Iritani, E., Latino Immigrants Pay a Price for Free Trade. Los Angeles Times. Los Angeles, CA, June 12, 2001.
20. Durand, J., Massey, D., Parrado, E., The New Era of Mexican Migration to the United States. *Journal of American History* 1999; 86:518-536.

References

21. Mixtec Migrants in California Agriculture. California Institute for Rural Studies, 1993.
22. Zabin, C., Hughes, S., Economic Integration and Labor Flows Stage Migration in Farm Labor Markets in Mexico and the United States. International Migration Review, Center for Migration Studies, Summer 1995.
23. Cooper, S., Burau, K., Hanis, C., al. e. Tracing Migrant Farmworkers in Starr County, Texas. *American Journal of Industrial Medicine* 2001; 40:586-591.
24. Health on the U.S.-Mexico Border: Past, Present, and Future. A Report to the United States-Mexico Border Health Commission, October 15, 2001.
25. NPR's Weekly Edition' Examines Effects of HIV/AIDS on Underserved Latino Communities. Kaiser Daily Report, October 23, 2001.
26. Cosio, F., Ramos, R., Leus, X., The U.S.-Mexico Border and Substance Abuse. The National Clearing House for Alcohol and Drug Information, Jan-Feb 1998; MS510.
27. Community-Based HIV/STD Prevention Interventions Among a Community of Migrant Farm Workers in California. HIV/AIDS Update, California Department of Health Services, Office of AIDS, April 1998.
28. Balls, Organista, P., Organista, K., Soloff, P., Exploring AIDS-Related Knowledge, Attitudes, and Behaviors of Female Mexican Migrant Workers. National Association of Social Workers, 1998.
29. Ford, K., King, G., Nerenberg, L., Rojo, C., AIDS Knowledge and Risk Behaviors Among Midwest Migrant Farm Workers. *AIDS Education and Prevention* 2001; 13:551-560.
30. Protecting the Health of Latino Communities: Combating HIV/AIDS. CDC National Center for HIV, STD, TB Prevention, July 2000.
31. Marin, B., Gomez, C., Latinos and HIV: Cultural Issues in HIV Prevention. In: Cohen, P., Sande, M., Volberding, P., eds. The AIDS Knowledge Base. Vol. 3. Philadelphia: Lippincott, Willkins, & Willkins, 1999:917-924.
32. Lafferty, J., Self-Injection and Needle Sharing Among Migrant Farmworkers. *American Journal of Public Health* 1991 Feb; 81:221.
33. McVea, K., Lay Injection Practices Among Migrant Farmworkers in the Age of AIDS: Evolution of a Biomedical Folk Practice. *Soc Sci Med* 1997; 45:91-98.
34. Freeman, R., Williams, M., Saunders, L., Drug Use, AIDS Knowledge, and HIV Risk Behaviors of Cuban-, Mexican-, and Puerto-Rican-Born Drug Injectors Who Are Recent Entrants into the United States. *Subst Use and Misuse* 1999; 34:1765-1793.
35. Friedman, S., Young, P., Snyder, F., et al. Racial Differences in Sexual Behaviors Related to AIDS in a Nineteen-City Sample of Street-Recruited Drug Injectors. NADR Consortium. *AIDS Educ Prev* 1993 Fall; 5:196-211.
36. Loue, S., Oppenheim, S., Immigration and HIV Infection: A Pilot Study. *AIDS Educ Prev* 1994; 6:74-80.
37. Slesinger, D., Health Status and Needs of Migrant Farm Workers in the United States: A Literature Review. *J Rural Health* 1992 Summer; 83:227-34.

References

38. Nordstrom, D., Krauska, M., DeStefano, F., Colt, J., Zahm, S., Ability to Trace Migrant Farmworkers Ten Years After Initial Identification in a Northern State (Wisconsin). *Am J Ind Med* 2001 Nov; 40:592-5.
39. Palerm, J., A Season in the Life of a Migrant Farm Worker in California. *West J Med* 1992 Sep; 157:362-6.
40. Davis, S., Gonzales, M., Promotores de Salud: Training Migrant and Seasonal Workers in HIV/AIDS Awareness and Prevention, National HIV Prevention Conference, Atlanta, GA, Aug 29-Sept 1, 1999. Farmworker Justice Fund.
41. Gortner, M., Eierman, B., Designing Outreach, Education and HIV Testing Programs for the Monolingual Migrant and Agricultural Populations, National HIV Prevention Conference, Atlanta, GA, Aug 29-Sept 1, 1999. Napa Valley AIDS Project.
42. U.S.A.-Mexico System Identifies Factors Helping, Hindering Migrant Workers' Health Care. *World Disease Weekly*, June 4, 2000.
43. HIV Infection, Syphilis, and Tuberculosis Screening Among Migrant Farm Workers - Florida, 1992. *MMWR* Oct 1992; 41:723-725.
44. HIV Seroprevalence in Migrant and Seasonal Farmworkers - North Carolina. *MMWR* 1988; 37:517-518.
45. Mull, L., Engel, L., Outterson, B., Zahm, S., National Farmworker Database: Establishing a Farmworker Cohort for Epidemiologic Research. *American Journal of Industrial Medicine* 2001; 40:612-618.
46. Bean, F., Corona, R., Tuiran, R., Woodrow-Lafield, K., Van Hook, J., Circular, Invisible, and Ambiguous Migrants: Components of Difference in Estimates of the Number of Unauthorized Mexican Migrants in the United States. *Demography* 2001 Aug; 38:411-422.
47. Rust, G., Health Status of Migrant Farmworkers: A Literature Review and Commentary. *American Journal of Public Health* 1990; 80:1213-1217.
48. Aranda-Naranjo, B., Gaskins, S., HIV/AIDS in Migrant and Seasonal Farmworkers. *Journal of the Association of Nurses in AIDS Care* Sept 1998; 9:80.
49. Gayet, C., Magis, C., Bronfman, M., Migración y SIDA en México. *Enfermedades Infecciosas y Microbiología* 2000; 20:134-140.
50. Bronfman, M., Camposortega, S., Medina, H., La Migración Internacional y el SIDA: El Caso de México y Estados Unidos. *Sida, ciencia y sociedad en México* 1989.
51. Bronfman, M., Migración y SIDA en México, SIDA. Un Reto Binacional, University of California, 1992.
52. Bronfman, M., Minello, N., Hábitos Sexuales de Los Migrantes Temporales Mexicanos a los Estados Unidos de América. *Prácticas de Riesgo Para La Infección Por VIH. SIDA en México. Migración, Adolescencia y Género* 1995.
53. Pineda, T., Loeza, B., Heredia-Cerna, R., Vázquez, N., Hernández, V., Perfil del Michoacano Emigrado a Los EEUU y El Impacto de la Epidemiología del VIH/SIDA En La Región, III Congreso Nacional de Investigación Sobre Salud, México, 1992.
54. Santarriaga, M., Magis, C., Loo, E., Baez-Villaseñor, J., Del Río, C., HIV/AIDS in a Migrant Exporter Mexican State, International Conference on AIDS, 7-12 julio de 1996.

References

55. Magis-Rodríguez, C., Del Río-Zolezzi, A., Valdespino-Gómez, J., García-García, M., Casos de SIDA En El Área Rural En México. *Salud Pública de México* 1995; 37:615-623.
56. Magis-Rodríguez, C., al. e. Rural AIDS Cases in Mexico, 12th World AIDS Conference, 28 de junio-3 de julio de 1998.
57. Magis-Rodríguez, C., Ruiz-Badillo, A., Ortiz-Mondragón, R., et al. Estudio Sobre Prácticas de Riesgo de Infección Para VIH/SIDA en Inyectores de Drogas de la Cd. de Tijuana B.C. *Revista de Salud Fronteriza* julio/agosto/septiembre 1997; 2.
58. Noriega-Minichiello, S., Magis, C., Uribe, P., Anaya, L., Bertozzi, S., The Mexican HIV/AIDS Surveillance System: 1986-2001. *AIDS Education and Prevention* 2002; 16:513-517.

